

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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40 Brazilian Gold, 24s. 20 Frontino, £3 16s. 3d. 10 Roman Gravels, £9 15s.

25 Bwlch United. 25 Glenrock Gold, £1 10s. 50 So. Devon Unit, 25s.

40 Carnarvon, 18s. 6d. 25 Hingston, £1 8s. 9d. 50 So. E. Wynnaid, £1 1/2.

20 Colorado, 21s. 6d. 20 Leadhills, £2 17s. 6d. 20 S. Indian Gold, £1 16 3/4.

30 Cambrian, 21s. 6d. 50 London & California, 10s. 100 Tecomia 10s.

10 Devalls Moyer. 25 Marke Valley, £1 1/2. 25 Tolima, A, £3 3/4.

20 Don Pedro, 16s. 3d. 40 New W. Caradon, 17s 6d. 50 United Van and Glyn.

20 Devon Gt. Uni., £1 1/2. 50 New Wh. Peevor, £2 1/2. Lead, 11s. 3d.

50 Pen-yr-Orsedd. 50 Non. Monde, 23s. 30 West Caradon, £2 1/2.

25 Devalls Moyer, £2 1/2. 75 Parys Corp., 18s. 10 W. Chiverton.

100 E. Roman Grav., 8s. 20 Panuleillo, £4 16s. 3d. 75 West Crebor, £2 6d.

100 East Crebor, 27s. 6d. 30 Prince of Wales, 25s. 40 West Devon, 13 1/2.

20 Emma, £2 16s. 3d. 50 Port Phillip, 11s. 10 Wheat Crebor, £4 1/2.

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to \$175,602, and the lead to \$55,114, or a total of \$230,716. There are 240 bars of bullion on hand. The California smelter has been running constantly both furnaces, and doing well. There is a large amount of ore on hand. Mr. M. E. Smith, who has charge of this smelter, and is one of the firm that is running it, also is superintendent of the La Plata Works. The shipments of bullion amount to 315 tons, containing 65,150 ozs. of silver. The silver value amounts to \$74,750, and the lead to \$31,293, or a total of \$106,043. There are on hand 2500 bars of bullion. One furnace of the Harrison Reduction Works was put in blast on Aug. 28, the other on Sept. 3, since which time both have been running. The works are well supplied with ore, having over 1500 tons on hand, and receiving large amounts. This has nearly all accumulated during the month. Mr. E. C. Jewett, formerly the assayer of the works, has been put in charge of the furnaces, in the place of Professor Fluegger, whose time is occupied with his private assay business. The shipments of bullion amount to 29 car loads, weighing 615,645 lbs., assaying on an average 145 $\frac{1}{2}$  ozs. of silver and 1-5th oz. in gold to the ton. The value of the silver amounts to \$50,958, the gold to \$1230, and the lead to \$30,641, or a total shipment amounting to \$82,829. In accordance to a telegram from New York, Mr. W. R. Breck yesterday turned over the Climax Mine to Mr. T. F. Van Aggenen, the newly appointed manager. Mr. Van Wagenen now manages both the Climax and Amie. Some fine specimens of ore were yesterday shown, said to have come from the California tunnel. A gentleman who visited the property states that there is a 4-ft. vein of ore in an incline running north-west from the tunnel, at a point 550 ft. from the mouth of the tunnel.

#### THE COURT GRANGE AND MYNYDD GORDDU MINES.

Amongst other evidences of the revival in trade is the increased activity in the lead mining industry, which forms so important an element in the welfare of our county; and one remarkable instance of this activity is the recent completion—solely for mining purposes—of a most extensive reservoir at Craig-y-pistyll, on the River Lerry, some 11 miles from Aberystwith. This reservoir—which has the largest capacity of any in this or the neighbouring county, being estimated to contain upwards of 50,000,000 gals. of water—has been constructed during the last two years, at the joint cost of the Mynydd Gorddu and Court Grange companies, for the purpose of obviating the great disadvantage they have hitherto suffered in the working of their mines, owing to their supply of water frequently running short, and that is their sole motive power, stopping their operations. Being situated amidst the mountains, very near the apex of the water-shed of the district, there is no natural storage for the water above this level, and however frequent and plentiful might be the supply of rain, they found by experience that a few days sufficed for all the surplus water to escape to lower levels, while the ordinary volume of the Lerry was not sufficient to supply their wants and the wants of some other mines which draw their supply from the same source, and will be equally benefited with the above mines by their bold enterprise. Hence the necessity for artificial storage, now most effectually secured by this extensive work, which is acknowledged by the best practical authorities to have been carried out in a most substantial and workman-like manner. Fortunately for the constructors, the work, although expensive and tedious from its only being able to be carried on at favourable periods of the season, has not been so costly as would appear at the first blush. The conformation of the ground has been carefully studied, and advantage taken of a site which seems formed by nature for the purpose; the River Lerry, at this spot, running through a mountain gorge, which only needed the effectual damming of the outlet to form a natural lake about three-quarters of a mile long, and varying from a quarter to half-a-mile in width. It will be understood, however, that even although this did away with the necessity of any embankment around the greater portion of the reservoir, it required a dam of great strength to cope with the immense weight of water impelled by a storage of 50,000,000 gals. The construction, therefore, has required no little engineering skill, and it may interest many of our readers, and especially those who might be affected by an overflow therefrom, if it were not so substantially made, to learn that the materials used, the massive character of the embankment, its mode of construction, and the excellence of every part of the workmanship, are such that nothing less than a convolution of nature is ever likely to affect its stability. To those who know how abundant the trout are in the upper section of the River Lerry it will be obvious that the fishing in this lake will soon be very valuable, and the directorate of the two above-mentioned companies have done well for their shareholders in securing a share in the fishing, jointly with Earl Liburne and Sir Pryce Prys, portions of whose lands comprise the area occupied by the reservoir, and to the local shareholders especially this will prove a pleasant boon. Having thus described this important and useful work, we turn our attention to the companies who have undertaken it, to both of whom we wish the success that their enterprise deserves.

The Court Grange Mine is on the Earl of Lisburne's property, about two miles from the Bow-street Station, and, after a short period of inactivity while prices of lead ruled so low, and the intermittent character of the water supply so sadly interfered with the profitable working of the mine, has recently been recommenced with renewed vigour and increased capital, now that the first named disadvantage has been effectually cured and the former one modified. The company have just adopted rock-drills, so as to more rapidly develop their extensive mine (a valuable system hardly yet used in this country, where we are difficult to move out of our old fashioned grooves), and having a complete and well-designed plant, and (what is still more important) a good mine with an extensive run of well-known lead-producing lodes and large reserves of ore, are likely to realise good profits to their shareholders.

We turn, however, with even greater interest to the Mynydd Gorddu Mine, as undoubtedly destined to very soon assume a leading position amongst the rich Cardiganshire lead mines, it being the universal opinion amongst the best authorities that it is one of the great prizes of the district. We well remember the excitement in the neighbourhood, and, indeed, amongst the mining community in London and elsewhere, when the principal lode in the mine was laid open at surface for some 80 or 90 yards, showing huge boulders of lead, mixed with a rich gossan, comprising all those component parts that seem to delight miners, and embedded in what they term a "kindly country"; there was a scramble for the prize, and many have been the enquiries here why the Londoners into whose hands it fell have not more rapidly developed its undoubted wealth. It appears that there were several other reasons for the delay besides the uncertainty of the water power, and we cannot better describe them than by quoting from a little history of the mine that appeared some time ago in the *Mining Journal*, from the pen of a gentleman many years important in this town, and one of the best authorities in the county on Cardiganshire mines.

The Mynydd Gorddu, or as it is described in the square No. 59 S.E. of the Government ordnance map, the Mynydd Gorddu Lead Mine, is situated in one of the best mineral districts of Cardiganshire, about seven miles from Aberystwith, and about two and three miles respectively, from Bow-street and Llanllangollen Stations of the Cambrian Railway. The geological formation is the clay-slate, and the lodes run nearly due east and west, being similar in both respects to the most successful Cardiganshire and Montgomeryshire mines. Three out of the four parallel lodes already discovered therein will be found marked in the Government geological map above referred to, and one of them—the great champion lode of that district and over 20 ft. wide—is laid down therein for some miles, and has been traced even much further since that map was issued. At the spot where the character of this lode, and the country in which it is embedded, and indeed all the geological and other surroundings, most accurately resemble Mynydd Gorddu—at the Haven and Henfwrth Mines—it is recorded that in the reign of Queen Elizabeth (when the prills of lead used to be carried on mules and ponies' backs to the ancient smelting works near Egwywysach) the Duke of Leeds, Earl Powis, Lord Burleigh, and the Earl of Derby realised, even by the then rude modes of working, and when lead was only worth 6/- per ton, £1,400,000. profit. The blocks of lead broken from the Mynydd Gorddu lode, both at surface and at the 24, were composed of solid galena, incased in carbonate of lead, interspersed with gossan and carbonate of lime, forming such a matrix as is rarely seen, and were exactly like those broken at the Haven Mines when partially worked in more modern times, and altogether it is not unreasonable to presume that Mynydd Gorddu will eventually yield as largely as those mines, in which case the present improved appliances, and the increased value of lead, ought to ensure even larger profits than were made in ancient times.

In the two mines immediately adjoining Mynydd Gorddu, both on the east and the west, and, indeed, at almost every point where this lode has been opened upon (which has entirely been done since, and owing to, the rich discovery made at Mynydd Gorddu when the costean pits were first opened on the back of the lode at surface) good lead has been found, and enough has been done to indisputably prove that it is one of the most powerful and masterly lodes in the whole country, but, of course, by far the most important evidences of its character is the enormous returns made therefrom at Haven and Henfwrth.

One peculiarly favourable feature of Mynydd Gorddu is that here the champion and another parallel lode intersect with each other, and form junctions with each other both longitudinally and vertically, the effect of which has been to form, even close up to surface, such a deposit of ore as caused at the time when it was first discovered quite an excitement to the neighbourhood; such an extraordinary surface discovery having hardly been known within the memory of man even in this rich lead-producing county. So extraordinary was it that there was a scramble to secure this rich prize, everyone wanting the whole, not merely a portion, which resulted, as usual, in the parties interested quarrelling among themselves, issuing injunctions in Chancery, and causing a suspension of all the works except such as were requisite to keep the lease alive; indeed, until the present enterprising proprietor obtained a preponderating influence the litigation seemed likely to be interminable.

With the new management, whose activity and indomitable perseverance under great difficulties deserves credit, a very different state of affairs supervened. The litigation having been closed and the title cleared negotiations (which proved to be very difficult and tedious) were at once set on foot to secure a continuous and plentiful supply of water-power, without which the mine, with all its reputed wealth, was almost valueless, the then existing supply of water being very intermittent, and even at the best of times insufficient to carry on simultaneously the operations of pumping, drawing, crushing, and dressing, in all of which water was to be the motive power. To effectually remedy this state of things it was necessary to bring the water from a distance of several miles, and to construct in the midst of the mountains an artificial lake capacious enough to hold four months' supply of water, a costly and tedious work, which, with the co-operation of the neighbouring Court Grange Mine, has just been brought to completion, and now there is no doubt that Mynydd Gorddu will very soon show how rapidly it can send to market the lead, of which it is indisputably proved it possesses almost any quantity. It does the management great credit that, even pending the construction of this reservoir (which is to contain 50,000,000 gallons of water), and in spite of the intermittent character of the water supply and the consequent frequent interruptions and delays, they have all along been gradually opening up and developing the mine, which has been done in a most masterly manner.

The surface plant is very complete and compact, and remarkably well laid out; it is already well able to treat up to 50 tons of lead per month, and has been so designed as to be easily extended at a very small cost, when (as is certain to be

the case eventually) the mine makes larger returns than that quantity. Under-ground the main shaft has been sunk to about 50 fms. from surface, levels driven intermediately at the adit, and at 12, 24, and 34 fms. below it, and the continuity of the splendid courses of ore laid open at surface effectually proved. About 8000t. worth of lead and blonde has been sold from these comparatively shallow workings, a very good earnest of the much greater returns that may eventually be expected from this mine, especially as every fathom that has been sunk or driven proves more and more that the great masses of ore that, judging from what has been already seen, are reasonably to be expected still lay somewhat deeper.

The Mynydd Gorddu Mine possesses a local interest in another respect, the company having been the pioneers of the system of purifying the refuse from the lead dressing, and preventing the pollution of the river therefrom. It was, perhaps, not altogether voluntary, for they were amongst the first who were threatened with an injunction under the Rivers Pollution Act; but, none the less, the system they introduced, which has been followed by others since then, was successful, as evidenced by the following extract from one of the reports of the Inspector to the sanitary authority of Aberystwith on this vexed and difficult question:—"Before leaving this matter, it may not be out of place to state that the commendable efforts with apparent success, are made already at Mynydd Gorddu, in order to purify the polluted water before leaving the spot by means of sets of pits and ponds. The water finally leaves as clear as from any ordinary fish-point, and does not seem to injure the quality of the stream it flows into."

We have called attention to the enterprise of these mines even in bad times, and with serious disadvantages to contend with, but we must not forget to mention that, on the other hand, they enjoy one great advantage over most other lead mines, the possession of which has no doubt much helped to embolden them in tackling such a work as this reservoir, which, if constructed near one of the large towns for the purpose of water-supply, might well have cost 20,000/- or 30,000/. The two that especially the Court Grange Company have a large quantity of silver in their lead, and consequently realise from 3/- to 5/- per ton for their produce even than the celebrated Van Mine, which, although it has little or no silver intermingled with its lead, is well known for the high percentage to which it dresses itself up, while the difference between their prices and that of other mines which only produce what is called native lead is considerable. This is a most important feature, especially when the price of lead is low, as it enables mines possessing this advantage to return profits even when others cannot pay their way. For example, in Saturday's *Mining Journal* there are mentioned sales of lead from the Cardiganshire mines (three of which contains a very fair proportion of silver) at 11/- 16s., and 10/- 3s. 6d., while on that very day the Court Grange Company sold 56 tons of their lead at 13/- 17s. 6d. per ton, and the Mynydd Gorddu Company's two recent sales of lead have realised 13/- 5s. 6d. and 13/- 3s., while they have sold as high as 13/- 17s. 6d. per ton—not in inflated times.

To call attention to the pluck and enterprise of these two proprietaries in constructing this splendid reservoir, and to wish them success they deserve, is our special theme here, but we note the less well with the others, who, like them, have spent large sums of money in mines in Cardiganshire, and cannot help thinking how different might now be the state of affairs in this country had the 300,000/- British capital (which is calculated to have been lost in foreign loans and schemes) been applied to the development of home industries, and even in this country alone an immense amount of capital might even yet be profitably applied in utilising the undeveloped wealth with which it undoubtedly teems, and which, with the improved appliances of modern times, ought to return even more millions of profits than it has done in the past.

—Aberystwith *Observer*, Oct. 16.

#### WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,  
MINEOWNERS, STOCK AND SHARE DEALERS, &c.  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Since the last meeting of Parys Corporation the ores sold have been—ochres, 412l.; copper ore, 1353l.; copper precipitate, 360l.: total, 2125l. The eight months' costs have been 3400l. There are, however, in the mine ready for sale ores to the value of 2530l., some of it copper raised through the above cost. The cash in hand is 3000l., making actual assets over liabilities 5500l. Besides which there are some thousands of unissued shares. The company, therefore, is in a very good position, and with an improvement in copper the returns might be doubled, and a profit made, irrespective of the 90 cross-cut south.

The Palladras lode was one of the richest in the Polrose district, and this also runs through Polrose, and a cross-cut in the 90 will intersect it in about 15 fms., so that there are three important points to come off, and either one would make the mine. The Margaret lode is now opening out tribute ground.

We shall know before long what the lode is worth in D'Eresy Mountain at No. 6 level. If as good all through as the 2 ft. cut into, there would, as the agent states, be no mine like it in all Wales. We do not, however, expect this. If the lode is as good throughout at No. 6 as it was at No. 5 the mine will be a great one, and we shall, of course, commence sinking to another level as soon as possible.

In reply to many enquiries, we may state positively that the Great Gorse lode, which is in two parts, the heading and hanging, passes through the whole length of Aberlllyn and then into the adjoining mine beyond. Between D'Eresy Mountain and Aberlllyn there is a soft part supposed to be under the lake, and it is generally supposed the lake itself is in the lode. These parts come together in Aberlllyn, yielding large quantities of blonde down to the No. 2 level, and we hope soon to cut lead in the heading at No. 3, and, perhaps, in the Valley cross-cut.

About this time last year we called attention to the dangerous state of South Frances, and showed that unless a large outlay was made a rather serious state of affairs might arise. This was denied by the officials, and we were pretty well abused in certain quarters for letting the outside world know the truth. The shares were then at 10/-, and to show how wrong (?) we were in our strictures, increased dividends were paid, and shares were got up to 15!. Our own opinion then was that the game would be kept up until shares were pretty well dispersed among outsiders; and how far we were justified both in our remarks and in our opinion a paragraph in the West Briton of the 14th will show. It says—"The great body of adventurers (in South Frances) were not a little surprised to hear that Captain Abraham James stated at West Basset meeting that the adventurers in South Frances had more water in the mine than they could possibly contend with, and difficulties too numerous to mention." "Perhaps it is owing," remarks the West Briton, "to these difficulties too numerous to mention, and from their being unable to cope with the water, which difficulties were unknown to the great body of shareholders, that two large adventurers have recently sold every one of the shares they held in South Frances."

We will only add to this, that just what has happened we foretold, on the best information, twelve months ago, in these notes; and the question now arises, what will have to be done, if the company fails to amalgamate with West Basset?

The ore at Wheal Crebor brought 1968l. 11s. 6d. The cross-cut, which has been driving to intersect the south part of the lode at the 120, has just reached it, and this is a very important point to watch. Good lode here would cause some excitement in shares again.

At West Crebor the lode 15 ft. deep is extremely promising, and may soon be in a course of ore.

At Prince of Wales the bottom of the mine is now drained, and the agent finds a good lode for 17 or 18 fathoms long in the bottom of the level. Owing to a choke he has not yet seen the 90 end east, which, before the water was in the mine, was valued at 15/- per fm. The Good Luck lode has been tested for tin in five places, and all produced tin. One place yielded 52 lbs., and another 37 lbs., of tin to a ton of stuff, and these two can be worked to a good profit. The lode is 3 $\frac{1}{2}$  to 6 ft. wide, and easy to stop.

East Crebor is looking well. The lode in the 70 east is 2 ft. wide, producing arsenical stones of ore. The lode in the stopes in the bottom of the 60 west is worth 30/- per fathom. On the south lode the stop below the 60 fm. level is worth 10/- per fathom.

The Eureka (Nevada) is strongly recommended by Capt. Rickard, the manager of Richmond, and looks a good thing. Mr. Macfarlane, of Wheal Crebor, has joined the direction, and the shares are being well taken up.

The Lovell Mine, we understand, is looking better. The lode in the winze sinking below the 40 has increased to 9 ft. wide, and worth

25/- per fathom, and should it hold down, as it seems likely, the mine may be again in a dividend-paying state.

Since the above remarks on South Frances were in type the agent has written against the amalgamation with West Basset, and adds "should this unfortunate amalgamation take place I should consider the prospective value of South Frances considerably lessened, if not ruined." And it is said rather than see the amalgamation the agent would resign, "as such a scheme would only benefit smelters and merchants."

On the Stock Exchange business has been rather dull during the week, the delay in the cession of Dulcigno and the prospect of further complications over the Greek question, naturally keeps buyers aloof and checks business. In the English railway market Brighton, A, stock still continues to fluctuate considerably, at one time dropping to nearly 150. The feature has been the rise in North British; Caledonians also are higher, the traffic returns of these two lines having been exceptionally good for the last few weeks. The other returns, though all showing increases, were in some cases rather disappointing—Great Easterns, 2900l.; London and North-Western, 1339l. North-Easterns still show large increases—over 13,000/- again this week. There has been a great deal of business doing in American railways, which have risen considerably, and will, we think, yet further improve; the receipts of most lines, as compared with those of last year, showing very large increases. Philadelphia and Reading shares, and Atlantic, Mississippi and Ohio bonds, have been especially buoyant, the latter having risen 9 or 10 per cent. The Grand Trunk of Canada traffic increase was 5087l., making an aggregate total of over 119,000l. Foreign stocks have been rather dull, though closing better, Spanish and Hungarians at one time showing an appreciable fall. Mexican railways preference shares, the purchase of which we strongly recommended some time since when they were much lower, have been rather depressed of late, on the rumour that the Government are going to discontinue the payment of the subsidy to the company. Should this be the case, and the shares in consequence drop, we think they ought then to be bought, as the stoppage of the subvention will not materially affect the payment of the interest. The English funds are very firm, owing in a great measure to the present cheapness of money.

Friday afternoon, four o'clock:—We have just received the following telegram from the secretary, who is on the mine at D'Eresy Mountain:—"Another blast in lode (at No. 6) shows 18 in. of lead further; reports fully confirmed, success of mine assured, and immediate."

#### FOREIGN MINING AND METALLURGY.

The Belgian iron trade remains in much about the same state, and there is little hope at present of a revival in affairs. The Belgian mechanical construction establishments have plenty of work, and orders for iron are expected to be obtained from them, but it is doubtful whether these orders will be sufficient to restore animation to the markets. One of the most important Liège construction establishments is actively employed, and so actively indeed that it will have to turn out a locomotive weekly for at least a year to come. Pig maintains its price in Belgium, and the same may be said of iron, but this is partly due to the fact that prices are now so low that they cannot well go lower. English pig for refining is now delivered at Antwerp at 27. 3s. 3d. per ton, and casting pig at 27. 6s. 6d. per ton.

The John Cockerill Company has obtained an order for 1200 tons of steel rails at Utrecht at 7. 5s. 6d. per ton.

The situation has not changed in the French iron trade. Transactions continue active, but prices have not revived. The Northern France Railway Company has ordered 140 locomotives for use upon its lines. The same company has also let contracts to various French firms for no fewer than 5091 carriages and trucks.

As regards the French coal trade, it may be stated that cold and rainy weather, which has prevailed at Paris, has sensibly increased the demand for household qualities of coal. This state of things has increased firmness to prices, and if the weather should become more winterly household coal delivered at Paris will not be obtainable below 27. 1s. 6d. to 27. 4s. per ton. The arrivals of coal at Paris maintain their importance, and fill up the gaps occasioned by sales. Trucks are becoming a little scarce, in consequence of the demand for them occasioned by beetroot traffic. The movement of coal from the Ruhr basin continues to be very active. During September the deliveries from the Ruhr basin amounted to no less than 227,000 tons.

Coal has remained firm in Belgium, and an advance is even beginning to be talked of. The deliveries have been considerable, and the demand is even becoming more decided from day to day. The first cold of the winter begins to make itself felt, and a current of orders has accordingly set in on winter account. In the Liège basin all the collieries are working to the full extent of their productive force, and a want of labour is felt in several directions. All coming coal for domestic purposes is quiet, but very firm. In the Charleroi district, as well as in the Borinage, prices are also firm, with a strong demand. This is what is usually observed at the commencement of winter. Prices have not changed at present in the Austrian coal trade, although the demand has become sensibly stronger.

65%, North British have advanced to 92—a further rise of 12. A relapse to \$44½ is noticeable in Erie. Mexican Railway Ordinary, 7½ to 7½. First Preference, 21½ to 22. Seconds, 13½ to 14. Canadian Copper, 1½ to 1¾. Illinois, \$117½ to \$118. Pennsylvania, \$61½ to \$61½.

FERDINAND R. KIRK.

#### FOREIGN MINES.

RICHMOND CONSOLIDATED.—Telegram from the mine at Eureka, Nevada: Week's run, \$60,000, from 1030 tons of ore. Refinery, \$50,000.

B. Rickard, Sept. 29: The cross-cut from Lizette Tunnel has been drifted 11 ft. without any change to mention. The 200 north cross-cut from main west drift has been extended 27 ft. in favourable ground. The 500 north from No. 14 chamber, has advanced 5 ft.; ground hard. The 600 west drift has been extended 23 ft.; ground favourable for drifting. The 600 No. 1 cross-cut (north) has been drifted 27 ft. in soft ground. The 600 No. 2 north cross-cut has been extended 15 ft. without any change. The 700, west from shaft, has been drifted 9 ft. in favourable limestone. The 700, west from shaft, has been extended 23 ft. in much more favourable ground than we have had for some time. The 800 north on fissure has been advanced 13 ft. in very favourable ground for ore. The 800, main west drift, has been extended 18 ft. in hard limestone. The 900, north cross-cut, has been drifted 14 ft. in favourable-looking ground. The 900, north-west on fissure, has been advanced 13 ft.; the fissure is regular, and the ground on either side looks very favourable for carrying ore. There is a decided improvement in No. 14 chamber; the ore in the western portion of it is opening, and promises to develop to a good size ore chamber to the west of the old chamber. No. 15 is looking well, and turning out about the same quantity of ore. No. 13 chamber has also improved in the southern end. The furnaces are in good working order, and smelting large quantities of ore. The machinery both in mines and smelting works is in good working order.

BLIE TENT.—Telegram from T. Price, Oct. 13: Partial clean up, \$12,500.

ALMADA AND TIRITO CONSOLIDATED.—Telegram from Mr. Clemons, dated Sept. 25: One week's run, \$3804.

PERCERVILLE.—Telegram: 400 tons crushed; yield, \$2700; profit, \$300. Time lost in changing pipe preparatory to sinking.

KAPANGA.—James Thomas, Sept. 11: I am pleased to inform you that during the past four weeks the new powerful winding gear has been completed, the wire-rope put to work, and the mud sediment cleared from the 50 cross-cut.

This work being done, on the 1st inst., I put nine men, three in a core, to clear up the bottom of the shaft, to square down the sides, put in bearers, and hang a winze, and sink 8 ft. in new ground. The ground in the bottom is an exceedingly hard bar or difficult working stone, being very angular and disjointed in formation, which makes the progress slow for sinking. When we met this hard bar of ground, in July, 1875, my report of that date says—"A very stiff bar of ground came in the shaft, the hardest and most crystalline rock, and the most difficult to sink we have yet met with, which caused the sinking this month to be slower than before." The same class of stone still remains in the bottom. I am hoping that we shall get through the bar of ground in a few fathoms, as the formation of the country consists of parallel belts of hard and soft stone. After sinking through this belt I hope to set a contract for sinking 10 fms.; at present it would be injudicious to set a contract with the present appearances. The winding gear and wire-rope is a perfect success, and working splendidly, economising fuel and engine-power, besides the safety of the men working in the shaft. I may say we have now the most complete mining plant in this part of the world.

FLAVILLA.—R. Gundry, Oct. 5: Since I last wrote you the work in the west drift of the Brooks shaft has been pushed, and we have completed the enlargement of the drift, and laid a track so as to be able to run a small car there, and have drifted about 8 ft. We have taken out a little ore in drifting, but nothing of any importance. We purpose driving the drift on a little, and then raising up on the vein, as I believe the best of the ore is above; I like the appearance of the prospect very much. In the east branch from the main incline the work of cleaning and repairing is progressing at a very fair rate; we have got through the worst part of the cave, and can get to the face of the incline now. Although we have about 300 ft. of badly caved ground to clean out and secure yet, which will take, perhaps, month to finish. In No. 1 incline we have drifted 18 ft. since we commenced, but have not found a settled formation yet. In the face now we have a quartz rock, which is very loose; if we can find a settled formation, which I think we shall soon, we can tell more about our prospects.

ISABELLE (Gold and Silver).—Extract of letter from Mr. Lewis Chalmers, dated Oct. 4: I now send you report for the month, and progress return and report for last week, both of which you will, I trust, find highly satisfactory. Pending the discussion about the Penrice machine, I thought it might not be out of place to cable you what he had done during the month with our present rig; so on the 1st I wired you as follows:—"Ran 328 ft. last month." This was run in 29 days, in very bad blasting trough good drilling rock; last week 31 ft. On referring to the progress return you will find that during these 29 days we drilled, with two drills, 8450 ft. of 2 in. holes, and took out 2798 tons of rock. Our rock was so tough that we had to charge and blast our centre cut-holes twice to bring it. Preparing for winter, we have had a good deal of outside work to do, but we have nearly overtaken it.

Foreman's report for month of Sept.: I have the honour to present the following report for the month of Sept.: Progress during the month, 328 ft.; total distance from mouth, 3890 ft.; total distance from monument, 3962 ft. The formation has been quite favourable for making tunnel, being moderately soft of the drift, and laid a track so as to be able to run a small car there, and have drifted about 8 ft. We have taken out a little ore in drifting, but nothing of any importance. We purpose driving the drift on a little, and then raising up on the vein, as I believe the best of the ore is above; I like the appearance of the prospect very much. In the east branch from the main incline the work of cleaning and repairing is progressing at a very fair rate; we have got through the worst part of the cave, and can get to the face of the incline now. Although we have about 300 ft. of badly caved ground to clean out and secure yet, which will take, perhaps, month to finish. In No. 1 incline we have drifted 18 ft. since we commenced, but have not found a settled formation yet. In the face now we have a quartz rock, which is very loose; if we can find a settled formation, which I think we shall soon, we can tell more about our prospects.

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## Mining Correspondence.

## BRITISH MINES.

**ABERLLYN.**—J. Roberts, Oct. 20: I have no change to report in the Valley cross-cut; the ground is still hard, but the joints are coated with a face of lead and blonde, showing that there must be lead and blonde in the lode when we get it. In the No. 3 cross cut it appears that we are entering into the lode; we have not met with a regular hanging-wall, but that may be accounted for by a course of spar striking it from an opposite direction at that point. There were yesterday some nice spots of lead in the end. There is not so much lead in the No. 2 end as there was last week.

**BEDFORD UNITED.**—R. Goldsworthy, Oct. 20: There is no change to notice in any part of the mine on the north lode since my last report. The Bridge lode in Macallan's engine-shaft having passed through the floor of spar, referred to in a former report, is improved, being 3 ft. wide, principally composed of gossan—a promising lode.

**BELL VEN.**—J. Bray, Oct. 18: We have intersected an elvan course in the cross-cut. When we have driven through this I expect we shall cut the lode at once, as I believe the elvan course runs on the lode.

**BELOWDA.**—J. H. Collins, F.G.S., Oct. 21: Since the last report furnished the men have been employed on completing the necessary repairing work. The engine-shaft has been substantially repaired and the sump cleared. So far as can be seen everything is now in perfect order. We have 48 heads of stamps ready to go to work. We are, however, waiting for the new air-pump bucket from the foundry. When this arrives (and it is promised during the present week) we shall lose no time in putting it in and starting the engine and stamps. I expect we shall stand and dress about 1 ton of stuff per day (of 24 hours) for each head we are able to keep going. At present we have only three men actually breaking stuff for the stamps. I have, of course, been closely watching the stuff they have broken, and I see no difference in it compared with that formerly sampled by me, and no reason to doubt that the products will come up to our requirements.

On the point, however, there must be some uncertainty until the stamps have been at work for some days. Good progress has been made in continuing the tramroad into the great pit. The underground men are now putting in the dam before spoken of in the adit level. I have ordered coal to be forwarded to the mine at once, and hope to report by next week that we have started the engine, but it will be seen from the above that we are kept waiting by outsiders.

**BLAEN-CÆLÉN UNITED.**—J. Pell, Oct. 20: The cross-cut north from the 30 opposite engine-shaft, having gone far enough without cutting any lode to value it, have suspended the driving. The stopes in back of 30 are looking well. Have put men to rise on a good branch of lead, west of engine-shaft, in the 20, nothing having been done to prove the run of ore in this part of the mine; set at 35s. per cubic fathom, and 4d. per ton for the lead. The lode south of Cælén Brook, going east towards Esgair-hir, is without change; have had a heavy snowstorm here to-day.

**BLUE HILLS.**—S. Bennetts, R. Harris, Oct. 16: The Pink lode in the 80 east end is not quite so productive as last week; at present it is worth 6d. per fathom. The same level west end is worth 5d. per fathom. At Bluebarrow shaft both the 42 east and west ends are producing low quality tinstuff, and the 30 east end is worth 9s. per fathom.

**BODRIDIS.**—H. Hotchkiss, Oct. 20: Saturday last being the end of our working month, I measured up and reset for the ensuing month, according with arrangements made when you were here.—Meadow Shaft: I have let to sink below the 110, to seven men, at 28s. per fathom. A winze to sink on the lode below the 110, to seven men, at 12s. per fathom; the lode here is 3 ft. wide, and continues much the same, producing beautiful specimens of lead ore. The 17, east of eastern shaft, I have let to drive on the lode, by four men, at 14s. per fathom. I am pleased to say that the lead ore holds good here, producing 2½ tons per fathom, and is going down in much the same dip or underlay, and is now within 5 yards of the 60. I have resumed the driving of the bottom or 60 fm. level, in order to come under this run of ore, and have let the same to drive, at 15s. per fathom. We have a little sinking of lead ore in this end at present, which I expect will improve as we drive on. All our surface machinery is in good working order, and all is going on regularly, together with the dressing of lead ore.

**BWLCH UNITED.**—N. Bray, Oct. 20: The stuff in the S. has been sufficiently cleared for me to make an examination of the level yesterday, and so far I am pleased with the section of unworked ground, in which I have had several holes blasted for trial, and have found splendid rocks of lead ore in a lode of fine appearance; this discovery is having my particular attention, and I am applying a good force of hands in clearing the level and laying the railway so as to get this place in good working order. I have decided to drive in the slide at the 50 instead of the 60 to take advantage of tilting and securing the open workings, and to save expense of drawing the stuff. The shaftmen have been employed in timbering and securing the old levels, so that I have no change to report in their bargain in the bottom of the mine; the same remark will apply to the 100 going east. Our supply of water for dressing has got scarce, and rather impedes our dressing.

**CARNARVON.**—John Roberts, Oct. 19: Setting Report: We have let the 90 end, to six men, at 13s. 1 f.m. stent. There is a leader of copper running somewhat across the lode which met with another leader in the direction of the lode. These have changed the character of the lode from a quartzose to quartz, which contains strong patches of copper, and which I think will lead to a good bunch, as it is rarely the case that we find copper at all here, except in connection with some body of ore. I do not think that we can be more than 2 fathoms from the slide, in connection with which most of the ore in this part of the mine occurs. At Talmignedd the lode has very much improved; the sulphur appears as though it is being displaced by copper. I broke from here some good stones of copper yesterday, which appear as though they belong to some body of ore, they were so rich and strong; we have to drive 6 ft. from the cross-cut to see how far it will extend, and to make room for sinking on it, as it appears to be improving in depth, and as yet it is very near the surface—price 8s. At Crag-y-Menyn there is still a strong lode of sulphur, and I do not see how it can fail to make copper. We purpose to drive a little further on it to see what it will do; should it not make copper in driving on it I should like to sink a little way to try it deeper—set to two men, at 3s.

**CARNARVON.**—B. Southey, W. C. Vivian, Oct. 21: We have at length succeeded, after encountering many difficulties, in draining and clearing the old workings below the 85, on north lode. These workings we commenced at about 25 fms. west of the engine-shaft, with which they have no communication below the 85, and were carried down in a valuable branch of copper ore, lasting to a depth of 18 or 17 fms. This place must have been always worked under the greatest disadvantages, in consequence of its having no connection with the engine and whin-shafts, except by means of the 85, which to all the ore and water had to be drawn in order to get to the shaft. The proper way, and the only proper way, to develop this lode is to sink the engine-shaft, which is now down to about the 95, (say) 10 fms. deeper, and then cross-cut to the lode, and open it out eastward and westward. In going west about 12 fms., a communication would be made with the old workings already referred to, and thus good ventilation would be afforded, and in going east it seems probable that further discoveries of metals will be made, adding greatly to the value of the mine. The cross-cut from the engine-shaft to the lode would not exceed 10 fms. in length, and as the shaft is a perpendicular one, and the lode in going below the 85 has little or no underlay, the deeper operations which would follow from a good discovery at the 105 would, as far as we can judge at present, be carried on without any increasing difficulty or disadvantage by continuing the same system of working. We think it would be wise to commence sinking the engine-shaft as early as possible. The south lode is at the 35 about 12 fms. south of the engine-shaft, and underlies rapidly to the south, thus always increasing its distance from the shaft in depth; it is, therefore, evident that to develop the lode a different system must be adopted from that which we advise for the north lode, and a shaft must be carried down, starting away from the engine-shaft, on the course of the lode at the 70, where the lode crosses the shaft. A good bunch of copper and tin was met with at the 85 on this lode, just where the cross-cut from the engine-shaft reached it, lasting some fathoms westward. This ore ground was worked in the back and bottom, and followed down to a depth of about 15 fms., the drainage being effected by a draught-lift connected with the engine by a chain through a communication made with the engine-shaft at the 70. To carry on the development of this lode effectively below the 85 the communication referred to with the engine-shaft must be opened out to a practicable shaft, suitable for rods and drawing gear; sinking below the 95 (the depth already reached) should then be vigorously pushed on, and the prospects are good for thus opening out rich tin deposits, which will probably be found extending eastward in the direction of the slope of the hill and of the dip of the rock formations forming it, in which the mine is situated. In the back of the 85 we have a rise and stope, a little west of the sink already referred to, being worked by four men; this is up 10 fms., and we have broken some fair quality copper ore, or tin, together with some rich tin-stone. At present it is declining in value for copper, but increasing in the production of tin. Although a great deal remains to be done to bring this mine into a highly productive state for copper and tin, yet offers excellent prospects for rewarding with a rich return those who embark their capital in it; its locality is a splendid one, and the lodes have the peculiar characteristics of those which in the same district have yielded, and are still yielding, such large profits to the fortunate shareholders of neighbouring mines.

**CLEMENTINA.**—J. Roberts, Wm. Sandoe, Oct. 20: There is a nice branch of the lode in the north end at the 38, as we have expected that it would do. The stopes are without change to notice. The dressing goes on regularly.

**COURT GRANGE.**—J. G. Green, Oct. 20: I have removed the men from the rise in back of 45 of east footway, as the indications there were not favourable for a deposit of ore, and have put them to rise at a point about 12 fms. east of shaft. We did some stoning here some time ago. The rise to be carried 9 ft. long, to four men at 13s. per fathom, the lode being worth, for length of rise, 10 cwt.s. per fathom; and as it is under a place that was worked underhand by the former workers from the 30, I hope to open some stoning ground by the plan adopted. I have put four men to strip down the north side of the 14, east of the lode, and I am pleased to say are getting a good mixture of ores, worth 8d. per fathom, set at 7s. per fathom. All the other points are without change. We have made fair wages, that the price given will leave a good margin of profit. We have now dressed on the mine 8 tons of lead and 12 tons of blonde. We shall require to stop crusher for a few days this week, in order to put in a new pair of shells and overhead elevator, &c. We shall then push on to clear the accumulated stuff in the mine, which I calculate will yield from 12 to 15 tons of lead ore. We are engaged clearing foundation for engine and air compressor.

**CROOK BURN.**—Robert Scott, Oct. 15: The standing water is all pumped out of the shaft; the feeder continues about 65 gallons per minute. The sinkers are taking the old timber out of the shaft bottom, and repairing ladder stages, &c., the sinking will be commenced on Monday, Nov. 1.

**CWMLYSTWITH.**—J. B. Rose, Oct. 21: In the 15 fm. level, driving east of Gill's cross-cut, on the new lode by rock-drill, the lode carried is 4 ft. wide; worth 2 tons of blonde per fathom, and also showing nice spots of lead. In the 15, driving west of long wine, below Gill's lower level, on the new lode, the lode is 4 ft. wide, composed principally of blonde, and will produce 1½ ton per fathom. In the 8, under Gill's lower level, driving west of Edwards's wine, on the new lode, the lode is 3 ft. wide; worth 1 ton of lead ore per fathom. We have stopped the driving of this level for the present, as we have tapped a feed of water, but

shall resume the driving again as soon as the 15 is sufficiently advanced to drain the water. Nine stopes which we have working will yield, on an average, 15 cwt.s. per fathom. In the pitch under Level Fawr, east of Level Fawr cross-cut, on the copper lode, the lode will yield 12 cwt.s. of lead ore per cubic fathom. In the pitch under Kingside adit level, east of Kingside shaft, on Kingside lode and branches, the lode is 6 ft. wide, producing 15 cwt.s. of lead ore per fathom. In the pitch in back of Kingside adit level, east of Kingside shaft, on Kingside lode and branches, the lode is 5 ft. wide, worth 15 cwt.s. of lead ore per fathom. In the pitch over Gill's upper level west of the Comet lode, the lode is 3 ft. wide, worth 10 cwt.s. of lead and 1 ton of blonde per fathom. In the pitch over Gill's upper level west of the Comet lode, the lode is 4 ft. wide, producing 12 cwt.s. of lead and 1 ton of blonde per fathom.

**H. H. Oaks, Aberystwyth, Oct. 22:** I am glad to inform you that we have got the 15 fm. level at Gwynystwith from Pugh's shaft; levels came quite right.

**D'ERESBY CONSOLS.**—J. Roberts, Wm. Sandoe, Oct. 20: There is a small branch of lead in the end east of Sutton's shaft, and we expect that it will improve as it goes under the lead going down to the bottom of the shallow adit. The western end at present is poor; the lode is small, but very well defined. We have finished the smithy and changing house.

**D'ERESBY MOUNTAIN.**—J. Roberts, Wm. Sandoe, Oct. 20: We have commenced the rise with the sump, and are now securing the ground and clearing out the stuff, which will take two or three days more. The men that were in the sump are working in the stone, and are bringing some very good leadstuff. We have commenced dressing the stuff we had on hand, and shall commence winding from the sump and stope as soon as the rise is cleared and secured.

**DEVON COPPER AND BLELENDE.**—W. Skewis, Oct. 20: The plunge lift is all fixed at the 30 and set to work. Owing to obstructions in the shaft, we could not drop the drawing lift as soon as expected. This, however, is now removed, and a 10-fathom lift will be dropped below the 30 to-day and set to work. The building of the winding engine-house is progressing favourably, and will be completed by the end of another week. Also, in next week's report I hope to be able to say something about the 40 and 38, 50 fathom level.

**DEVON GREAT CONSOLS.**—Isaac Richards, Oct. 20: Wheal Josiah: New South Lode Shaft: In the 130 west the lode is 1½ ft. wide, composed of capel, quartz, and a little mundic.

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had in this level since the end was driven over where the sump is sunk under this level. I have now great hope of having a good lode soon. It is much of the same character as when we sunk it three months since, and is looking much better now than it was on Tuesday last, when one of the shareholders went through the mine.

**NORTH HERODSFOOT.**—T. Trelease, Oct. 21: Owing to a large increase of water our progress in the shaft has been rather slow in the past week, and we are obliged to suspend operations in clearing the 50 north, and have put in drains in both north and south levels to prevent the water from coming into the shaft, and we hope now we shall not have much water to contend with in the future. I have put the 50 men about other necessary work in securing footing, &c. The masons are getting on with the office and store-room. Our engine, &c., continues to work very satisfactorily.

**NORTH PENSTRUTHAL.**—Stephen Davey, W. Polkinghorne, Oct. 21: High-burden Shaft: The lode in this shaft, sinking below the 105, is 3 ft. wide, and producing good quality tinstuff; the shaftmen making fair progress with tinstuff. The lode in the 105, driving east, is 2 ft. wide, and worth, for tin, 6d. per fathom. The lode in this level, driving west of shaft, is 2 ft. wide, and producing a little tin for the stamps. The lode in the 85, driving west, is 3 ft. wide, and worth, for tin, 5d. per fathom. The lode on branch, driving east and west, is 58 cross-cut, producing a little black and grey copper ore, but not sufficient to value. The lode in the 45, driving east of shaft, is 2 ft. wide, and worth for tin, 6d. per fathom. In the 45 cross-cut, driving south, we have no change to remark. Ward's Lode: In the rise in back of the 10 the lode is producing saving work.

**NORTHERN.**—Thomas Tonkin, Oct. 21: The 42 Fm. Level: During the week the rise in the west section has produced some good saving work, and as the ground is easy we shall soon open up stoning ground of no mean order. The tribute ground in this section is looking well, and keeps up a yield of 1½ ton to the fathom. The driving forward in the east section is on a beautifully-defined lode; the ground is composed of flockan, fluor-spar, and calcite, with a strong mixture of lead ore for a width of above 4 ft. The tribute pitch in this section yields 15 cts. of ore to the fathom.—The 15 Fm. Level: The cross-cut, west of Low shaft, presents no features of improvement since last reported on. The tribute ground in the west section is yielding 10 cts. to the fathom in easy ground. The tribute pitch in the east section also yields 10 cts. to the fathom. The cross-cut for the side vein in this section is in hard spar, and appears as if near a change of ground; some solid pieces of ore are met with in the forecastle.—Adit Level: The tribute ground in this level yields 8 cts. of ore to the fathom, and is unchanged in appearance.—Surface Operations: We are pushing forward the dressing as fast as possible, and the machinery is in good working order.

**PANDORA.**—H. Nottingham, Oct. 20: New Lode: The 45, going south, is still looking well; worth 35 cts. of lead ore per fathom per width of level, and we are leaving good lead on the footwall of the lode. The north end is worth 2½ tons to a fathom per width of lode. We have now opened 6 fms. in length on this course of ore, and both ends looking well. In the 33 we have holed both whites; we have been sinking from the 23, and are now preparing to stop with some of these men, and the others will be placed to drive the 33 north. I have no other changes to report from underground.—Surface: Our reservoirs are now so low that we are obliged to pump with the engine. Dressing is now going on well since we have put on the new sieve to the crusher, which delivers the stuff much finer, and saves us a good deal of labour on the floors. I shall sample 50 tons of ore next week, 30 of lead and 20 of blonde.

**PANT-Y-MWYN.**—E. Parry, Oct. 14: We have a very nice lode in the 24, east of Modlyn; four men are driving at the rate of 9 ft. per week, and we are glad to say the lode in the 44 west is improving as we advance. We hope to go forward twice the distance this month as we did last month; we have eight men driving this end, and every effort is being made to push on to the ore ground, which evidently dips faster between the 13 fathom level end, east of Griffith's and Modlyn shafts than it does nearer to Griffith's shaft, but there is one thing encouraging us forward in this undertaking, and that is that the lode has been very rich as far as we followed it down below the 13 fathom level, east of Griffith's shaft, and it may be as well for me to remind you that when we strike the ore ground we shall have 100 fathoms continuous of that ground, and judging from what has yielded between the 13 fm. level and the day level, our 24 fm. level will lay open for stoning at least 1000 tons of lead ore, and most of it in speedy ground, and so can, therefore, be raised cheaply and it is the opinion of all the old miners as well as our own that our levels, or say this 24 fm. level, should be continued on into the Pensarn ground, where the lode has been worked all along the surface and down to the water level for half a mile in length in a time of wet. We get the water from this ground now, and find no difficulty in contending with it, so that there is no fear of the water; in fact, our Modlyn shaft has drained the water for a long way east and west of it, and we are pumping and winding at Modlyn and Griffiths, with 40 tons of coal per month. We are in good shape now, and are developing the mine as fast as possible, and shall have a rich mine in a short time. No particular change elsewhere in the mine.

**PENHALLS.**—S. Bennetts, R. Harris, Oct. 16: The lode in the rise above the 21 is 2 ft. wide, producing some low quality tinstuff. The 70 east end is at present unproductive. The 60 east is worth 7d. per fathom, the 55 east 6d., the 50 west 6d., and the 48 west 5d. per fathom.

**PENNANT.**—J. Kemp, Oct. 19: In preparing my report I thought it might interest our shareholders to know somewhat of the situation of the mine. It is three miles from St. Asaph, and seven from the noted mining town Holywell. It stands on the side of the vale of Clwyd, the scenery of which would repay anyone for a visit even if there were no Pennant Mine to inspect, and that there is life in this mine I will endeavour to prove in the following statements, and at the same time point out our late and present proceedings. An adit level was driven up from the main road side, which is 40 yards deep at the engine-shaft, through which the water flows, and we have erected machinery in a position to enable us to make use of the water in every process required for the dressing of the minerals. Our machinery comprises a Robey engine with crusher, winding apparatus with patent, and other jigs, and flat buddies, the whole being so admirably arranged that we can dress upwards of 50 tons per month with three bands. The underground operations have mostly been confined to driving the 30 and 60 levels west, and stoning in the back of the same levels. The 80 is now undergoing a great change, and I am expecting daily to cut into a great body of mineral. I think there can be no doubt about this, as we went through the same trench in the 60, which is now in advance of the 80. The lode in the last-metioned level underwent a great change last week; when driving we found some fine lumps of lead, and in one place left some fully 4 ft. wide undercut, which is a grand prospect for the 113, at which depth our engine-shaft stands, where an 113 level is started both east and west, so that when we have intersected the bunch of ore before us in the 80 we shall only have to pump the water to enable us to resume the driving of the 113, which will give us whole ground to the 80, or a total of 53 yards. There can be no doubt that the bottom levels should be driven, because it is in depth we must expect to meet with large deposits of lead, with all speed, and also recommend the following:—A cross-cut north about 60 yards east of shaft in the 80, which is now in operation. Drive the 60 east, which is in a very promising lode with a stream of water issuing from the fore-bay. Continue the stope so that we can send supplies to the market; this done I have no doubt of the result. Seeing that all our dressing machinery is complete and in regular working order, with pumping-engine, capstan, smith and carpenter's shop, and all other requisites, and wanting not a penny for anything save labour, and that we are on the verge of realising our wishes, I do trust will enable me to proceed with the points enumerated which, I feel certain will turn out successful.

**POLROSE.**—W. Bennetts, C. Roach, Oct. 20: The Margaret lode, in the 90 west, is still 3½ ft. wide, and of promising character. We are here opening ground that will pay to work on tribute when the end is further advanced. In the 90 cross-cut, north from Polrose lode, the men are making good progress, and the ground continues of a very congenial character for mineral. In the 90 cross-cut south, to intersect the Poldrasad lode, we have a most favourable channel of ground, and we hope to make speedy progress with the drivage.

**PRINCE OF WALES.**—John Andrews, Oct. 21: The shaftmen have finished clearing away the stuff from the bottom of the shaft, and the bottom of the mine is now perfectly drained, and we have examined the 80, or bottom end west, which is 2 ft. wide, composed of quartz, capel, mundic, and copper ore—a very promising lode; and in the bottom of this level, west of shaft, we find a good lode for 17 or 18 fms. in length, but the value of which we are not yet in a position to say. In consequence of a choke in the level, we have not yet been able to see the 90 end east, but the last value of this end before the water was let, in our understanding was 15d. per fathom. The shaftmen are now engaged cutting ground for bearers and eislers for the plunger-lift at the 77. We have tested the Good Luck lode at five different places, all of which produce tin, one 52 lbs, and the other 37 lbs. per ton of stuff. These two points can be worked to a good profit, as the lode is 3½ ft. to 6 ft. wide, and speedy for stoning.

**ROMAN GRAVELS.**—Arthur Waters, Oct. 21: The lode in the 125, south of new engine-shaft, is 8 to 10 ft. wide, composed of nice-looking carbonate of lime, with a good mixture of soft lead ore against the footwall, and there is every prospect of an early improvement as the water has gone forward. The 110, north of this shaft, is now holed to the level driven south from flat-roof shaft, and we, therefore, have a section opened for over 100 fms. in this direction. The 110 west is up to a good wide lode, which we shall prove to full width by the cross-cut west without delay, and may look forward to good ore ground from the present end forward.

The 95 south is worth 1 ton per fathom, and is on the eve of improvement. The 80 south is worth 3 tons per fathom, and is now entering the rich ground seen in the level over.

The 65, south on hanging-wall portion, is worth 2 tons per fm. respectively ¾ and 1 ton per fathom. The winze below the 65, on the middle course, is worth 1½ ton per fathom, with ore ground standing on both sides as we go down. The stope generally are as for some time past. We have to-day

**SOUTH CONDURROW.**—Wm. Rich, Wm. Williams, H. King, Oct. 20: We have water in the boundary shaft which hinders the sinking below the 30, but the winze sinking below this level on the course of the south lode is quite dry; the lode in this winze has a kindly appearance, and yields good stones of tin. The 40 end, east of engine-shaft, is worth 12d. per fathom. The 50 east is worth 12d. per fathom; the stope in the back of this level is worth 15d. per fathom. The 60 east yields a little tin. We are making a trip flat at the 60 at Plantation shaft preparatory to driving the 60 west on the course of the lode. The ground is moderately easy for driving in the 70 cross-cut south; this cross-cut will prove the ground under the boundary shaft. The 70 end east is worth 10d. per fathom. The 80 east is worth 8d. per fathom. The stope in the back of this level is worth 9d. per fathom. The 80 end west is worth 10d. per fathom. The 93 east is worth

10d. per fathom; we have about 8 or 9 ft. more to sink for a lode, &c., before we start off the 120. The lode is large, composed of nice spar and bluestone, intermixed with lead and copper ores. The 110 end west is worth 1½ ton of lead ore per fathom, and shows good indications for further improvement. The sinking of lead and 5 cts. of copper ore per fathom. A stope east of shaft is worth 15 cts. of lead and 7 cts. of copper ore per fathom. In the 100 end the lode is 18 in. wide, composed of spar, intermixed a little with lead and copper ores,

The sinking of the winze in this level is satisfactory. We are sinking by the side of the lode to gain speed, but carrying a small portion which looks very well for copper ores. No. 1 stope in the back is worth 9 cts. of lead per fathom; No. 2, 8 cts.; No. 3, 10 cts.; and No. 4, 10 cts. per fathom. The tribute pitches are producing fair average orestuff. All the machinery is in good order, and working well.

**SOUTH DEVON UNITED.**—W. Hooper, Oct. 16: The 110 east is set to six men, stoned the month, at 12d. per fathom; the lode is 5 ft. wide, and its value 10d. per fathom. The 100 end east is set to two men, at 6d. 10s. per fathom; the lode is 4½ ft. wide, composed of capel, mundic, and rich copper ore, with a value of 25d. per fathom. This is a very fine looking lode, more settled, and steadily improving as it leaves the influence of the cross-course; and, being the furthest end east, speaks well for the eastern ground. No. 1 stope, in back of this level, is set to four men, at 12d. per fathom; the lode is 3 ft. wide, and its value 15d. per fathom. No. 2 ditto is set to four men, at 4d. per fathom; the lode is 3½ ft. wide, with a value of 24d. per fathom. The 90 end east is set to two men, at 7d. per fathom; the lode is 3 ft. wide, with a value of 10d. per fathom. No. 1 stope, in back of this level, is set to four men, at 3d. 10s. per fathom; the lode is 3 ft. wide, with a value of 13d. per fathom. The 80 end east is set to four men, at 11d. per fathom; the lode is 6 ft. wide, and its value 30d. per fathom; here we have driven through a very fine lode for many fathoms in length.—Surface: On Thursday we put three new jiggers to work, and I am glad to say they are doing their work well. The carpenters are now engaged in erecting a shed over the picking, spalling, and cobbing floors. No. 1 stope will be lost in getting it completed.

**SOUTH PENSTRUTHAL.**—S. Davey, Oct. 21: High-burden Shaft: The lode in this shaft, sinking below the 105, is 3 ft. wide, and producing good quality tinstuff; the shaftmen making fair progress with tinstuff. The lode in the 105, driving east, is 2 ft. wide, and worth, for tin, 6d. per fathom. The lode in this level, driving west of shaft, is 2 ft. wide, and producing a little tin for the stamps. The lode in the 85, driving west, is 3 ft. wide, and worth, for tin, 5d. per fathom. The lode on branch, driving east and west, is 58 cross-cut, producing a little black and grey copper ore, but not sufficient to value. The lode in the 45, driving east of shaft, is 2 ft. wide, and worth for tin, 6d. per fathom. In the 45 cross-cut, driving south, we have no change to remark. Ward's Lode: In the rise in back of the 10 the lode is producing saving work.

**NORTHERN.**—Thomas Tonkin, Oct. 21: The 42 Fm. Level: During the week the rise in the west section has produced some good saving work, and as the ground is easy we shall soon open up stoning ground of no mean order. The tribute ground in this section is looking well, and keeps up a yield of 1½ ton to the fathom. The driving forward in the east section is on a beautifully-defined lode; the ground is composed of flockan, fluor-spar, and calcite, with a strong mixture of lead ore for a width of above 4 ft. The tribute pitch in this section yields 15 cts. of ore to the fathom.—The 15 Fm. Level: The cross-cut, west of Low shaft, presents no features of improvement since last reported on. The tribute ground in the west section is yielding 10 cts. to the fathom in easy ground. The tribute pitch in the east section also yields 10 cts. to the fathom. The cross-cut for the side vein in this section is in hard spar, and appears as if near a change of ground; some solid pieces of ore are met with in the forecastle.—Adit Level: The tribute ground in this level yields 8 cts. of ore to the fathom, and is unchanged in appearance.—Surface Operations: We are pushing forward the dressing as fast as possible, and the machinery is in good working order.

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**SOUTH WHEAL CREBOR.**—John Goldsworthy, Oct. 20: The ground in the engine-shaft, sinking below the 15, is a light-blue clay-slate, highly charged with mineral. The 16, driving north-east on the counter, shows indications of an important change being near. The 16, driving south-east on the counter, produces good saving work for copper ore. This end being within 5 or 6 fms. of the south of ore, and both ends looking well. In the 33 we have holed both whites; we have been sinking from the 23, and are now preparing to stop with some of these men, and the others will be placed to drive the 33 north. I have no other changes to report from underground.—Surface: Our reservoirs are now so low that we are obliged to pump with the engine. Dressing is now going on well since we have put on the new sieve to the crusher, which delivers the stuff much finer, and saves us a good deal of labour on the floors. I shall sample 50 tons of ore next week, 30 of lead and 20 of blonde.

**SOUTH WHEAL FRANCES.**—A. T. James, Oct. 21: The lode in Pascoe's shaft, sinking below the 215, is worth 40d. per fathom for 12 ft. in length. The 215 west is worth 12d. per fathom. The same level east is producing low quality tinstuff. The 205 west is producing a little tin. The winze in the bottom of this level is worth 10d. per fathom. The 195 west is worth 8d. per fathom. The 185 east and west the lode is producing a little tin, but not enough to value. The 175 west is worth 10d. per fathom. The stopes are not looking quite so well as they were, but notwithstanding this we hope to sell the promised quantity of tin against the coming meetings.

**TANKERVILLE.**—A. Waters, Oct. 21: The lode in the 220 west looks like twichling up, present value being 10 to 12 cts. per fathom. We have not reached the junction of Robert's lode here, but from the quantity of water coming from the forebay I think we must be near it. The two stopes in back of this level are together worth 1½ ton per fathom. The lode in the 220 east is 4 ft. wide, and worth about ½ ton per fathom. The end is getting very wet, and looks as if we are going to have a change for the better shortly. The three stopes in back of this level are together worth 3½ tons per fathom. The two stopes in bottom of the 205 east are together worth 2½ tons per fathom. The cross-cut in the 220—about 10 fms. from shaft—going south from main lode, and most of it in speedy ground, and so can, therefore, be raised cheaply and it is the opinion of all the old miners as well as our own that our levels, or say this 24 fm. level, should be continued on into the Pensarn ground, where the lode has been worked all along the surface and down to the water level for half a mile in length in a time of wet. We get the water from this ground now, and find no difficulty in contending with it, so that there is no fear of the water; in fact, our Modlyn shaft has drained the water for a long way east and west of it, and we are pumping and winding at Modlyn and Griffiths, with 40 tons of coal per month. We are in good shape now, and are developing the mine as fast as possible, and shall have a rich mine in a short time. No particular change elsewhere in the mine.

**SOUTH WHEAL FRANCES.**—A. T. James, Oct. 21: The lode in the 215, west of shaft, sinking below the 215, is worth 40d. per fathom for 12 ft. in length. The 215 west is worth 12d. per fathom. The same level east is producing low quality tinstuff. The 205 west is producing a little tin. The winze in the bottom of this level is worth 10d. per fathom. The 195 west is worth 8d. per fathom. The 185 east and west the lode is producing a little tin, but not enough to value. The 175 west is worth 10d. per fathom. The stopes are not looking quite so well as they were, but notwithstanding this we hope to sell the promised quantity of tin against the coming meetings.

**TEMPLE.**—Oct. 20: During the past week better progress has been made with the boring machinery in the cross-cut, 15 ft. having been driven, making the entire length of the level from the Temple lode 22 fathoms. A lode, or a branch of the Champion lode, has been cut into about 5 ft., but the north wall has not yet been reached. It is composed, as far as seen, of quartz and carbonate of lime, with a few spots of copper, but no lead has as yet been found in it. Other works progressing as last reported.

**TREVINE CONSELS.**—Joseph Prisk, Oct. 14: In conformity with your request I inspected this mine on the 12th inst., and beg to hand you the following report:—New Shaft, No. II lode: I find the shaft is sunk about 10 fms. from surface in a lode from 4 to 5 ft. wide, composed of mundic, prian, gossan, and copper ore, embedded in the footwall, with a beautiful decomposed elvan; the killas being over the lode is in my opinion the desirable element for large productions of copper ore in this rich mining district.—No. 2 Lode: About 5 fms. further south there is a lode from 3 to 4 ft. wide, similar in character, and the end is getting very wet, and looks as if we are going to have a change for the better shortly. The three stopes in back of this level are together worth 3½ tons per fathom. The two stopes in bottom of the 206 east are together worth 2½ tons per fathom. The cross-cut in the 220—about 10 fms. from shaft—going south from main lode, and most of it in speedy ground, and so can, therefore, be raised cheaply and it is the opinion of all the old miners as well as our own that our levels, or say this 24 fm. level, should be continued on into the Pensarn ground, where the lode has been worked all along the surface and down to the water level for half a mile in length in a time of wet. We get the water from this ground now, and find no difficulty in contending with it, so that there is no fear of the water; in fact, our Modlyn shaft has drained the water for a long way east and west of it, and we are pumping and winding at Modlyn and Griffiths, with 40 tons of coal per month. We are in good shape now, and are developing the mine as fast as possible, and shall have a rich mine in a short time. No particular change elsewhere in the mine.

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## The Mining Market: Prices of Metals, Ores, &amp;c.

METAL MARKET—LONDON, OCT. 22, 1880.

IRON.	s. d.	£ s. d.	TIN.	s. d.	£ s. d.
Pig, G.M.B., f.o.b., Clydes.,	2 11 9	—	English, ingot, f.o.b.,	92 0	—
" Scotch, all No. 1 ...	2 12 6	—	" bars	93 0	—
" Welsh, f.o.b., Wales	5 0 0	—	" refined	94 0	—
" in London	5 10 0	—	Australian	88 0	—
" Stafford	6 15 0	7 0 0	Banca	90 0	—
" in Tyne or Tees	5 10 0	—	Straits	88 0	—
" Swedish, London	9 10 0	10 0 0	COPPER.		
Rails, Welsh, at works	5 5 0	—	Tough cake and ingot	64 10 0	65 10 0
Sheets, Staff., in London	8 0 0	8 10 0	Best selected	65 0	67 10 0
Plates, ship, in London	5 0 0	7 10 0	Sheets and sheathing	70 0	71 0 0
Hoops, Staff.,	7 0 0	7 10 0	Flat Bottoms	73 0	0 0
Nail rods, Staff., in Lon.	6 5 0	6 10 0	Waltham	71 10 0	72 0 0
STEEL.			Burra, or P.C.C.	69 0	—
English, spring	13 0	0 19 0	Other brands	68 10 0	67 10 0
east	30 0	0 40 0	Chill bars, g.o.b.	65 10 0	61 5 0
Swedish, Kent, bars	15 0	—	PHOSPHOR BRONZE.		
" fag. ham.	15 10 0	—	Allloys I., II., III., and IV.	£120 0	0 0
English, pig, common	15 5 0	—	" VI. and VII.	135 0	0 0
" " L.B.	15 15 0	—	" XI. Spl. bearing metal	112 0	0 0
" " W.B.	17 0 0	—	BRASS.		
" sheet and bar.	16 0 0	—	Wire	63 1/2 d.	—
" pipe	16 10 0	—	Tubes	9 1/2	—
" red	17 10 0	18 0 0	Sheets	8 1/2	7 0 d.
" white	22 0 0	24 0 0	Yel. met. sheath. & sheets	6	—
" patent sheet	18 10 0	—	TIN-PLATES.*	per box.	
Spanish	14 17 6-15 0 0	—	Charcoal, 1st quality	1 10 1 0	3 0
NICKEL.			2nd quality	0 18 0 0	0 19 0
Metal, per cwt.	15 0	0 0 16 0 0	Coke, 1st quality	0 17 0 0	0 18 0
Ore, 10 per cent. per ton.	20 0	0 25 0 0	2nd quality	0 16 0 0	0 16 6
QUICKSILVER.			Black	per ton	15 10 0
Flasks, 75lbs., war.(nom)	6 17 6-	—	Canada, Staff., or Gla.	12 0	0
SPELTER.			Black Taggers, 450 of	30 0	0
Silesian	16 10 0	16 15 0	Black zinc.	14 x 10	—
English, Swansea	17 10 0	—	TIN-PLATES.*	per box	
sheet zinc.	20 5 0-21 10 0	—	Charcoal, 1st quality	1 10 1 0	3 0

\* At the works, 1s. to 1s. 6d. per box less for ordinary; 1s. per ton less for Canada; 1s. 6s. per box more than 100 quoted above, add 6s. for each X. Tin-plates 2s. per box below tin-plates of similar brands.

**REMARKS.**—A quiet and somewhat dull tone has supervened since our last report; and, as the shipping as well as the consumptive demand keeps slack, sellers for the most part have been unable to realise higher rates, except in such instances where activity prevails from speculative orders. The contraction of a good *bona fide* trade indicates the necessity of reducing prices speedily; for, notwithstanding that speculation may tend to maintain prices for awhile, and thus enable the original sellers of the raw material to turn out their produce at a profit, yet speculation does not extend to the manufactured trade, and hence manufacturers have to be content with reduced prices while, perhaps, paying dearer prices for the raw material. There are some of the manufacturers reported busily occupied, but in some cases it is said to be more in fulfilment of old contracts than from present orders, and it is thought not unlikely but that the unfavourable comparisons which the Board of Trade Returns show will, probably, continue to be made for the remainder of this year with those of 1879, possibly, damp the spirit of speculation which now exists, and without the aid of which the markets would, undoubtedly, soon fall away, while prices would be most likely reduced to a sufficiently low level to tempt consumers and shippers to give their needless support to the markets.

The advancement or even the maintenance of quotations at the present time seems somewhat inopportune, for the markets are evidently not in a sound enough position to justify the continuance of current rates, for what with the enormous stocks, the heavy supplies, the falling off in the regular demand, and the large quantities which have but recently been exported to our colonial markets, are sure evidences that the actual state of the trade is too uncertain a condition to warrant the prevalence of anything but an exceptionally low range of prices. The uncertainty as to what course politics may take also creates an uneasy feeling, and the improved tone which we reported to prevail last week on account of the more favourable advices regarding Turkish affairs, has since been more or less shaken by the latest advices, showing that there still appears serious difficulties in the way of a speedy and pacific settlement. Nevertheless, as the policy of our Government is one of peace, a tolerably confidential feeling prevails, and the more unfavourable reports which have lately been received have not produced so depressing an influence as they might otherwise have done.

**COPPER.**—This market has continued steady, and is without any new feature which is likely to influence it either one way or the other. Holders do not appear to be very ready sellers at current rates, while buyers for the most part refrain from purchasing to any large extent. Nevertheless there are a few operators who appear to think that the present time affords a favourable opportunity to make contracts, and have purchased accordingly, and which has given rather more tons to the market, although no appreciable change has been effected in quotations either for Chili bars or manufactured, orders for the latter at the moment being limited. The Chili charters for the first half of this month are announced as 230 tons, and the price in Valparaiso is telegraphed as 587. 15s., cost and freight to Liverpool. The bi-monthly returns of Chilian and Bolivian produce in first and second hands in Liverpool and Swansea are, on the whole, satisfactory, the stock being rather less than at the beginning of the month, and is estimated at 33,032 tons on the 15th inst., against 33,584 tons on the 30th ult. The imports during the first two weeks of this month were light, being only 511 tons, against 1620 tons for the same time last year. The deliveries, however, compare unfavourably, being 1063 tons, against 3429 tons. According to the Board of Trade Returns the imports for the first nine months of this year are about the same as those for the corresponding period of 1879, being 72,807 tons, against 72,588 tons, whereas the exports for the same time have been 46,911 tons, against 49,970 tons.

**IRON.**—There is nothing fresh to be reported as regards the state of this market; the tone keeps fairly good, but the amount of business transacted remains limited. It is, however, satisfactory to find that many of the trade reports from the several producing districts throughout the kingdom are encouraging and tend to impart confidence. The shipping trade appears to be rather gloomy, and as exports now compare unfavourably with those for the corresponding period of 1879 doubts prevail as to whether the revival in the trade is as general and extensive as at first made out. Nevertheless the want of cheerfulness is easily and simply explained, for it must be remembered that the extraordinary burst of activity which inflated our markets last autumn was both premature and unhealthy, and the enhanced prices which were then realised caused such an excess of production that stocks have ever since been rapidly increasing, and which now deters operators from bolstering up and giving the markets that support which they might otherwise do. Prices now compare favourably with those ruling a year ago, but regular trade does not appear sufficiently good to warrant the maintenance of even present rates; and as the speculative as well as the legitimate demand is quiet and shows no symptoms of recovery while prices are upheld, it seems more than probable that ere long sellers will have to be content with still lower rates.

Quotations should be brought down nearly, if not quite, as low as those ruling previous to the revival in the trade last autumn, as unless they are reduced to figures somewhat approaching those prevailing at that time no increase in the demand can be looked for, as consumers and shippers are being now well supplied, it is not reasonable to expect them to effect purchases unless they can derive some considerable advantage in the way of price. Recent advices from New York show the trade in that country to have somewhat improved, and the influence of an increased demand has caused greater buoyancy in prices for Scotch pigs. Current quotations for No. 1 Glengarnock and Coltness are 825.50, and Eglinton 821.50—a rise of 4s. on Glengarnock, and 2s. on Eglinton. There is a fair demand for old rails, and prices are maintained; but enquiries for scrap have become less numerous, and prices reduced 4s. per ton, making the present value 825.50, and old rails are quoted at 825.50. Advices from Australia show that a marked improvement is noticeable in the demand at Sydney for nearly all descriptions of iron, and particularly in that for fencing wire, which has somewhat increased in value—No. 2 gauge being quoted at 12s. 15s., or an advance of about 10s. per ton upon the quotation given in the previous advice. In galvanised iron there is but little improvement reported; nevertheless, a moderately steady demand prevails, and 22d. 17s. 6d. is being asked for No. 26 gauge of best brands. A very fair business is reported in Scotch pigs, and prices keep steady at about 25s., for qualities equal to No. 1 Clyde.

There is little or no change to be reported as to the state of the trade in Wales. At some of the establishments regular employment is given, there being no lack of orders. Prices, however, have assumed a rather weakening tendency, which is said to be more in sympathy with the reduction recently made in marked Staffordshire bars than from any decrease in the demand. Another furnace has been put in blast, so it is evident there is no intention at present of reducing the production. The trade is said to be improving at Sheffield, and at some of the collieries the men are working full time, the output of pigs being very large. Prices, however, have undergone no appreciable change. From Wolverhampton a rather better demand is reported to prevail for hematites, and sellers have be-

come less willing to make concessions. Common pigs, however, are weak, while bars are quoted from 20s. to 30s. down on the quarter. A fair enquiry exists for plates, and prices are somewhat firmer. There is said to be a steady trade doing at Birmingham, and some fair orders which have recently been given out has given increased activity to a few of the mills and forges. Buyers seem to think that the market has about reached its minimum, and are, therefore, placing orders lest there should be renewed activity in the speculative demand, which would push up prices against them, and it is thought not unlikely but that speculators may again soon come forward on account of producers, and manufacturers generally being almost unanimous in their complaints of the unremunerative prices now ruling. Ordinary bars are quoted as lows as 5L. 15s., and cold blast all-mine-pigs at 5s. These prices, though lower than they have been for some little time past, are above the lowest point in 1879.

A better feeling is said to have characterised the Middlesborough market, and sellers all round have become stiffer in their quotations. The improved tone is attributable partly to the more favourable advices of the state of the Glasgow market, combined also with increased shipments. Quotations for No. 3 are ruled at about 39s. 3d. to 39s. 6d., closing with a firm tendency. Forge iron is quoted at 38s. 6d. Makars ask 40s. for No. 3 and 39s. for No. 4. These prices are reported to have been realised for prompt delivery, but buyers appear reluctant to purchase for forward delivery at ruling rates. Stocks have further increased, the total visible stock last Tuesday amounting to 104,590 tons, or an increase of 2629 tons for the week ending on that day. The exports last week were more numerous, and the deliveries were in excess of those for the previous week, the chief of which were sent to Scotland and the Baltic, while an average quantity was shipped to continental ports. The total exports of pigs were about 24,000 tons. The shipments of manufactured, however, were not so good, being under 3000 tons. The plate trade appears to be in a satisfactory position, and two fresh works have been started. Angles are also in better request, and are quoted at 5L. 15s., while bars are selling at 5L. 10s. to 5L. 12s. 6d.; ship plates at 6L. 12s. 6d., and puddled bars at 3L. 15s.

The Glasgow warrant market has maintained its position, at times displaying a strengthening tendency. On Monday the opening price was 50s. 7d., and improved to 51s. On Tuesday a large business was transacted between this figure and 51s. 9d. cash, when sellers displaying a desire to take profit prices receded to 51s. 4d., but on Wednesday the market again recovered to 51s. 6d., closing, however, at 51s. 15d. Yesterday being a Glasgow holiday there was no market, but to-day a fair business has been transacted, the market closing at 51s. 9d. The foreign and coastwise shipments last week compare unfavourably with those of the corresponding period of 1879, being only 11,196 tons, against 23,323 tons, and the total shipments from Christmas to date this year have been 561,717 tons, against 4,470,093 tons in 1879, and 327,422 tons in 1879. The number of furnaces in blast has been increased to 111, whilst the stock on the 15th inst. was 474,817 tons. The imports of Middlesborough pig-iron to Grangemouth last week were 8380 tons, against 5490 tons for the same week last year, and which makes the total decrease this year upon 1879, 11,265 tons.

**TIN.**—There has continued to be wide fluctuations in this market, and the amount of business transacted has been extensive. The market having closed last week in a very animated condition, opened on Monday with more disposition to take profits, and sellers being somewhat numerous, prices showed a weakening tendency, and business in foreign was done chiefly between 882. 10s. and 871. 15s., and on Tuesday cash parcels changed hands from 871. 5s. to 872. 2s. 6d. On Wednesday, however, buyers again came to the front and prevented the market from falling away to any further extent, and buying becoming spirited the price advanced to 882. 3s. 2d., closing firm at the best. Yesterday the market was quiet, and prices remained steady at 882. 5s. to 882. 7s. 6d. sharp cash, 882. 10s. 19d. four months, while to-day the market has been quiet, and closes at 882. 8s. The stock, according to the last returns, was light, and as the deliveries in Holland are expected to be much larger than they have been for some little time past, it is thought not unlikely but that the next statistics may again be very favourable, in which case higher prices would undoubtedly be demanded. Recent advices from America are also satisfactory, and tend to strengthen the idea that prices will further advance.

**LEAD.**—This market is without change, the demand continuing limited, and prices easy. Shipping orders show no improvement, and remain few, and only for small quantities.

**SPELTER.**—Prices are weak, and the market keeps dull; nevertheless, the activity in the galvanised iron trade indicates that the consumption must be fairly good, but there is no revival in the shipping trade, the demand from India being especially slack for both English and foreign, the former being procurable at about 12L. 10s., and the latter at 6L. 15s. to 17L. per ton.

**STEEL.**—Some of the mills are reported fairly busy, but the demand, on the whole, is decidedly limited.

**TIN-PLATES.**—The demand is quiet, and prices show a downward tendency.

**QUICKSILVER.**—Still quoted 6L. 17s. 6d.; the demand is quite of a retail character.

**MESSRS. HARRINGTON, HORAN, AND CO. (Liverpool, Oct. 15.)**—We are without any advice of Chili charters for the past fortnight. During that period fair sales of bars have been effected at 60L. 5s. to 61. 15s. per ton, according to brand and position, and the market is steady to-day at 60L. 15s. per ton for good ordinary brands on the spot. The sales of furnace materials comprise 300 tons Rio Tinto regulus, 600 tons Cape ore, 25 tons Peruvian ore, 550 tons Italian ore, 1000 tons New Quebec ore, 330 tons Spanish precipitate, 30 tons English precipitate—all at 12s. per unit; 90 tons English precipitate at 12s. 15d., 270 tons Bolivian ore (sulphuret), at 12s. 15d., 75 tons Chilean ore (carbonate) at 12s. 9d., 454 tons Rio Tinto precipitate at 12s. 15d., 170 tons Spanish precipitate at 11s. 9d., 80 tons Mexican ore at 12s. 15d., and 800 tons Betae ore at 11s. 6d. per unit. At the Swansea sale, on Sept. 21, 1853 tons ore, average produce 7 1/2 per cent., realised 11s. 7 1/2 d. per unit; and at the sale on the 5th Inst. 1883 tons ore, average produce 7 1/2 per cent., realised 7s. 6d. per unit. Import of Chili copper during the past fortnight 511 tons fine, against 1620 tons fine same time last year; delivery of Chili copper during the past fortnight 1063 tons fine, against 3429 tons fine same time last year. Arrivals here during the fortnight of West Coast (A.S.A.) produce—Britannia (s.), from Valparaiso, &c., with 16 tons ores, 108 tons bars, and 225 tons ingots; Patagonia (s.), from Valparaiso, &c., 8 tons ores and 178 tons bars. At Swansea—nil. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at—

Ores. Regulus. Bars. Ingots. Barilla.

Liverpool ..... 395 ..... 21,723 ..... 174 ..... —

Swansea ..... 365 ..... 3112 ..... 9,434 ..... —

Total ..... 365 ..... 3507 ..... 31,207 ..... 174 ..... —

Representing about 33,032 tons fine copper, against 33,584 tons Sept. 30, 1875 tons Oct. 15, 1879; 23,275 tons Oct. 15, 1878; 17,908 tons Oct. 15, 1877. Stock of copper contained in other foreign ore and Spanish precipitate, 2642 tons fine, against 400 tons Oct. 15, 1879. Stock of Chili copper in Havre, 5855 tons fine, against 4358 tons Oct. 15, 1879. Stock of Coro Coro barilla in Havre 263 tons fine, against 325 tons Oct. 15, 1879. Stock of Chili copper afloat and chartered for to date, 12,200 tons fine, against 15,180 tons Oct. 15, 1879. Stock of foreign copper in London

manager of South Frances, remarks that—"Should this unfortunate amalgamation take place I should consider the prospective value of South Frances considerably lessened, if not ruined," whilst the partisans of West Bassett state that at that mine (West Bassett) they have good shafts, good stamping power, and the water generally well laid out, whilst at South Frances they have crooked shafts and other great disadvantages; it being added, moreover, that the market price of South Frances is but 65,250/- (450 shares at 142, 10s.), and that of West Bassett 93,000/- (6000 shares at 162, 10s.). The conclusion drawn being that West Bassett "is selling for nearly 33 per cent. more money than South Frances," which is absurdly erroneous, since even 97,675/- is 50 per cent. more than 65,250/-.

The writer's object is evidently to give a fictitious value to West Bassett. There are, however, other figures which might be given. South Frances upon an outlay of 34,275/- has returned 183,487/- in dividends to the shareholders; West Bassett on an outlay of 42,100/- has returned but 161,100/-.

If there is to be an amalgamation (which will probably only be possible by first discharging the whole of the agents in both mines, and appointing new committees) it should be prospective. The mines should be worked as at present for twelve months,

and the capital in the new concern should then be distributed to the shareholders according to the dividends paid during that time. The present combined capital is 76,375/-, so that a new concern with 100,000/- nominal capital, in 15 shares, could readily effect the arrangement mentioned by determining to

issue any unappropriated shares to form a reserve fund.

Richmond, 15/- to 16/-; the usual telegram from the mines is the same. Eureka Nevada states that the week's run was \$60,000, from 1030 tons of ore. During the week the refinery produced \$50,000. The manager (Sept. 29) reports that the 900 north-west on fissure has been advanced 13 ft.; the fissure is regular, and the ground on either side looks very favourable for carrying ore. There is a decided improvement in No. 1 chamber; the ore in the western portion of it is opening, and promises to develop to a good size ore chamber to the west part of the old chamber. No. 15 is looking well, and turning out about the same quantity of ore. No. 13 chamber has also improved in the southern end. The furnaces are in good working order, and smelting large quantities of ore. The machinery both in the mine and smelting works is in good working order.

Ruby and Dunderberg, 5/- to 6/-; the usual weekly report is considered favourable, and the telegram is confirmatory. The output for last week is reported to show an increase upon the previous week, and it is considered that it may be expected to be augmented as the driving in the ore body progresses. The first-class ore is being reserved in accordance with the recommendations of the manager, and in anticipation of starting the furnace by Nov. 1, by which time the output is expected to be sufficient to run one furnace at least. It is understood that Mr. Dowen has visited the mines, and reports favourably upon the miner-like way in which the work has been carried out, both above and below ground.

An announcement, which is no doubt intended to form the basis for a new American gold swindle, has just been made in the Alta California. It is said that a man named Tichenor, of Tichenor and Dudley, who recently bought the Calistoga Hot Springs Hotel, has for two weeks been extracting gold from the water by a process known only to himself and a few other persons. From ten barrels he obtained 500 oz. It is remarked that the gold is the highest grade of fineness, and as the springs in the locality are very numerous, and the volume of water exceedingly large, it would be useless to attempt to estimate their value if they continue to yield such a return as the experiments have proved thus far. Tichenor says that the dirt adjacent to the springs in the tract known as the hot water field will yield \$60 to the ton. The owners will erect suitable works within the next week for carrying on operations on a more extensive scale. That the said Tichenor, assuming the report to be correct, is either a rogue or a fool is beyond question, and whichever designation belongs to him it is desirable that capitalists especially English capitalists, should be cautioned against believing any such absurdities, a solution of gold in water of the character of the Chicken-soup Spring being well known to be a chemical impossibility. If the statement be made merely to attract visitors to the hotel, it may be passed by as a mereless trade hoax, but under any other circumstances speedy steps should be taken to secure prosecution for fraud, although it might only protect capitalists who are really almost too stupid to deserve protection. The story, however, is worth repeating. It is said that this Tichenor with his family took rooms at the Springs Hotel, and after remaining a short time, quietly made proposals to the owner for the purchase of the Springs property. A sale was made, and Mr. Tichenor was the purchaser at \$9000. It soon began to be noise about that he was the man who had discovered and patented the process to extract gold from water. He had analysed the water of the spring known as the Chicken-soup Spring, and found a large per cent. of gold to the gallon of water, and since purclasing has put up his apparatus, and in the presence of many citizens he extracted from a five and a half gallon pail of water \$14 35c. in gold.

Devon Great Consols, 11 1/2 to 12 1/2, and have been in increased de-

mand all the week, and no doubt this is owing to the fact that the mines are looking much better at the Wheal Emma portion, as well as at the other parts, where further important discoveries of copper and manganic are shortly expected. As was stated a week ago the 873 tons of copper ore (for the month's sale) was likely to bring almost as much as the previous month's sale of 1000 tons. The sale on Thursday last of the 873 tons realised nearly 2100/-, whereas the previous month the 1000 tons realised only 2000/- It should be observed that the price of arsenic is also advancing.

Devon Great United, 1 1/2 to 2 1/2, and have been in active demand, and appear scarce on the market. Active operations are being carried on in fixing the pitwork in Watson's engine-shaft so as to get the water out as early as possible and commence operations on the well-known rich Devon Great Consols Maria lodes, from which emanated the large dividends in that mine, and shares rose from 17 per share to 800/- per share.

East Caradon, 1 1/2 to 1 1/2; the meeting at Salisbury to-day passed off very satisfactorily. There was a debit balance of 300/-, and a call of 25, 6d. per share was made. The condition of the mine is reported to be altogether more favourable—granite is showing itself at the 130 fm. level.

At West Phoenix Mine meeting, on Monday, the accounts showed a credit balance, after discharging all liabilities to Sept. 4, of 1841, 17s. 7d., which was carried to credit of next account. The reports of Capts. John Holman and Richard Guyas are considered favourable. They have already 23 men employed.

Mona, 15 1/2 to 16; the mine continues to open out well. In one part of the new workings the bluestone is apparently giving way to copper of rich quality. More furnaces have lately been started to deal with the increased returns, and another parcel of regulus is nearly ready for sale.

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## ANGLO-AMERICAN MINING.

**RICO SILVER MINING COMPANY OF COLORADO**  
(LIMITED LIABILITY), CHICAGO, U.S., carefully managed at small expense. Profits of 100 per cent. per annum are expected, much more may be realised. The property of the company is at Rico, on the Rio Dolores, in South-Western Colorado—a district containing the richest and most easily worked Silver and Gold Mines in the world.

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For prospectus and information, write to J. J. WEST, 245, Wabash Avenue, Chicago, U.S.

## THE "JAMIN" PATENT ELECTRIC LIGHT.

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J. A. BERLY, C.E., A.S.T.E., &amp;c.,

Engineer, and Sole Agent for Great Britain and the Colonies

16, NEW BRIDGE STREET, LONDON.

## Notices to Correspondents.

\*\* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

**NICKEL**—"E. and Co." (Glasgow).—There is, practically speaking, no nickel ore at present produced in Great Britain, but the Duke of Argyll has some on a Scotch estate belonging to him, which could, no doubt, be turned to account if there were a market at a fair price, and his lordship would probably offer facilities to responsible parties inclined to work it. The metal is extracted from many British ores, but such ores are purchased by Birmingham houses by private treaty, and the sellers are frequently unaware that it is the nickel which makes the ore attractive to the buyer. Voel Hirading, in Flintshire, which sold 11½ tons of cobaltiferous ore for £33.2s. 5d. in 1879, is the only mine mentioned by Mr. Hunt under the head of Nickel and Cobalt, and this contained rather over 2 per cent. of cobalt and ¾ per cent. of nickel, which is much under the assay of some of the Devon and Cornish ore. The best market for the purchase of nickel ore proper, such as Garnierite, &c., would be Paris, most of such ores coming from New Caledonia, and being consigned to a banking house in Paris.

**FIBRE MACHINES**.—Can any reader of the *Mining Journal* give the names of the principal manufacturers of Mexican fibre machines such as are now in use in Yucatan, Mexico, for converting the century plant, agave, &c., into Mexican fibre?—J. E. H.: *Georgetown, California.*

Received.—"J. E." (Oldham): The letter has been forwarded, as requested.—"W. N."—"J. S. P."—"C. G."—"R. H." (Wales): Apply to Messrs. Lockwood, of Stationers' Hall Court, London; or any local bookseller will procure the work—"P. A."—"J. C. V." (Paris)—"F. W. N." ("Natal")—"C. J. H."—"E. R." ("History of Tin Mining in Bohemia and Saxony")—"F. G. S."—"Shareholder" ("Wheat Cress")—"M. K. and R." (New York): Tables showing the Values of Silver and Gold—George Daly (Leadville, Colorado); The Brittenstone Silver Mining Company—"W. R."—"K. E." (East Cadron)—"Reader"—"A. A. M." should consult a sharebroker—"J. C." : The papers have been sent, as requested—"R. D. A." (Sydney): Next week—"A Shareholder" (Flagstaff)—"G. H." (Forest Gate)—"P." : We shall be glad to hear—"S. N. D."—"Bournonite" (Canada): Next week—"Gold not Gilt," on Practical Information for Miners, shall appear in next week's Journal.

THE MINING JOURNAL,  
Railway and Commercial Gazette.

LONDON, OCTOBER 23, 1880.

## EMPLOYERS' LIABILITY.

On Jan. 1 next will come into force the Act passed last session to render employers liable to compensate their workpeople for personal injuries sustained by them in the course of their employment. The effect will be to impose a distinct money tax upon the already sorely tried and heavily burdened industries of this country. What will be the amount of this tax? and how can it be best met? are questions which call for immediate and careful consideration.

What is likely to be the amount of this tax as it affects mining? The Act provides that where a workperson suffers personal injury he, or in case of death his personal representatives, may bring an action to recover compensation if such injury or death is caused—

1.—By a defect in the plant or machinery of his employer; provided such defect arose from or had not been discovered or remedied owing to the negligence of the employer or the person he may have deputed to see that the plant is kept in proper condition; but if the workman knew of the defect or negligence and failed to notify the employer or his deputy he has no remedy.

2.—By the negligence of the person having superintendence entrusted to him by the employer; and this superintendent is defined as a person whose sole or principal duty is superintendence, and who is not ordinarily engaged in manual labour—that is, in the case of coal mines, managers, foremen, interviewers, deputies, and firemen; but here, too, if the workman injured knew of the negligence and failed to give notice he has no remedy.

3.—By the negligence of a person in the service of the employer, to whose orders the workman was bound to conform, and did conform, when the injury resulted from his having so conformed. But here, again, if the workman knew of the negligence and failed to give notice he has no remedy. Probably, too, it would be necessary in this case to prove agency in order to render the employer liable.

4.—By the act done or omission made of any person in the service of the employer in obedience to the rules established by the employer, or in obedience to particular instructions given by any person delegated with the employer's authority in that behalf, if the injury resulted from some impropriety or defect in the rules or instructions. But in the case of mines the special rules approved by the Secretary of State cannot be deemed improper or defective; and in the case of "particular instructions" these must be shown to be improper or defective to enable a workman to recover; and if the workman knew they were defective and failed to give notice he has no remedy.

It will thus be seen that the increased liabilities of employers, although modified by the qualifying clauses, are likely to be serious, and that it is impossible in the present state of our knowledge to say exactly what they are likely to amount to. The amount in each individual case is limited to three years earnings of a person in the like employment in the same district, but we have no means of estimating for what proportion of the accidents occurring an employer could be made liable under the Act, having regard to the limitations by which his liability is regulated.

How are these liabilities to be provided for in the case of mines? It has been suggested that employers might contract themselves out of the Act; that they might refuse to employ any person except under a special contract that the employer should not be liable to compensate the workman for any injury sustained by him in his employment. But in case of death would not the personal representative of the workman still have the right to recover? And if the Act were attempted to be thus systematically evaded, how long would it be before Parliament would interfere to prevent such contracts?

Another suggestion is to form an employers' defence fund, and fight every claim made under this Act, no matter whether justly or not. Surely this would be a most unwise course to take. Are not the relations of capital and labour already sufficiently strained? Can it be the true interests of the employers to set themselves in open antagonism to their workmen and to defy public opinion?

There are several insurance companies who insure against accidental injury or death, and it has naturally enough been mooted that possibly these companies might see their way to extend their operations so as to enable employers to insure themselves with them against the claims of their workpeople under this Act. But the employers are not called upon to insure their workpeople absolutely either against injury or death; they only require to insure themselves against such accidental injury or death as they are rendered liable for under this Act. There are no data from which to estimate the probable

amount of the liability, and without knowing something of the risk how can you estimate the premium? The whole question is involved in such uncertainty that it is difficult to see how any existing insurance company under its present powers could undertake this liability. In the Northern coal field, in West Lancashire, North Wales, and one or two other districts, Miners' Relief Societies have been established, which are supported and managed principally by the workmen themselves, and to the funds of which the employers contribute a certain percentage varying from 10 to 20 per cent. of the subscriptions by the workmen. These provide relief for the accidentally injured members, and support the widows and orphans left by any members who may be killed. It was said during the discussions on the Bill that the effect of the Act passing would probably be to injure or destroy these societies, as employers would refuse to continue their subscriptions if they were to be held liable to compensate their workpeople under the Act. But these Societies provide for all accidents, and probably for a large proportion for which the employer could not be held liable under the Act. Those who have experience of these societies, and have seen the large amount of quiet unobtrusive good done by them, would esteem it a terrible misfortune if they should be crippled in their usefulness, and I cannot think that any employer would willingly withdraw or lessen his contributions to their funds. It has been suggested that these societies, where they exist, might be made available to meet the employers' liability by raising the percentage they pay to (say) 25 or 30 per cent. of the men's subscriptions, to make them, in fact, mutual insurance societies of men and masters. But suppose that this could be done by agreement between the employers, the relief societies, and the representatives of the workmen, in what way could such arrangement be rendered permanent and binding? In the present state of trade, no doubt, if the masters were firm they could make it a condition of employment that every workperson should join the relief society, and also contract himself out of the Act. But this could only bind the workman for his usual period of employment, mostly only a fortnight. By giving a fortnight's notice he could at any time get out of his engagement; and if the times so improved as that the workman should again be master of the situation, no doubt he would quickly free himself from what he would look upon as forced alienation of his privileges. What would then be the position of the employer? Worse than before. And what would then be the position of the relief societies? And again, how could this arrangement be made to bind each and every employer? Even now in the same district there are cases where some employers refuse to pay more than 10 per cent. to the relief societies funds, while others are paying 15, the latter being the rate agreed to at a representative meeting of the employers themselves.

There is yet another method of enabling the employers to meet the liabilities likely to fall upon them, that is by mutually assuring each other against damages and costs under this Act, in the same manner that shipowners mutually assure against marine risks. The cases are very similar in that the risks are unknown, and consequently no premium can be fixed. The employers might form an association, each one as it were underwriting himself for a certain value in proportion to the magnitude of his works. A committee of management might be formed in each district. Every claim brought under this Act would be carefully enquired into by this committee, aided by the best legal advice, and if well founded settled without law proceedings, and every improper claim could be resisted in the Courts. The expenditure could be met by calls at intervals as required, and no more money would be called than was absolutely needed to meet the liabilities. It should be remembered that this Act, objectionable as it is from an employers' standpoint, is not the act of the workmen or their delegates, but the deliberate will of the nation expressed through its representatives in Parliament; and now it is the law it is the duty of the employers to try loyally to carry it out, and to meet the burden imposed in a manly and generous spirit.

## THE PENT-UP GAS IN MINES.

So far the enquiry into the explosion at the Seaham Colliery has not resulted in affording any data whatever as to its probable cause. Our mining engineers, or some of them at least who have studied the gases in our mines, suggest that it might have resulted from one of those sudden outbursts which at times take place without the slightest warning, enveloping workings of great extent in an explosive mixture. In one instance, there was a sudden rush of gas from the floor, and in a few minutes the whole return, about a mile from the bottom of the pit, was fouled from end to end. In the working of coal the pressure of gas underneath forces up the floor, and as more coal was taken away it escaped with tremendous force at the weakest point, which was next the face. No doubt, in many of our coal mines in different parts of England there are similar accumulations of gas under their feet, and when the pressure is taken off it is liberated. The floor at one colliery where the gas forced its way at not less than 11 in. in depth was rent, and it required not less than 30 lbs. per square inch force to do it. Comparing that thickness of 11 in. with 35 ft. thickness of hard stone which overlay the softer measures charged with gas, it suggests an almost unlimited force under the strata so long as there was no continuous vent. From experiments made, the pressure was found to vary from 135 lbs. per square inch down to 80 lbs., the highest pressure having been found to be always suddenly followed by the lowest pressure. It is evident, therefore, that when at the highest the gas has been blown off or has got vent in some way, and then gone down to the lowest pressure. As to the actual cause of the gas then suddenly forcing itself out, no really reliable data has been given, but some of those who have paid considerable attention to the matter have come to certain conclusions that appear to be well grounded. One mining engineer, of great experience, informs us that it is just possible that, as regards the floor, it may in some parts have been slightly rent, and then discharged little gas; but nothing of the sort has ever been seen in a colliery where there had been several outbursts through two sides of the goaf—that is, the working faces and the side which was open to the return air course had always been watched and examined. It was, however, more probable that when the gas had got to the greatest pressure the floor had been sprung or lifted over a certain space, making room for the gas to expand to a less density and force for the time till the continuous discharge of more gas in time brings it up to its former power and pressure, as registered on the gauge. Though the pressure is great, there is no knowing how much greater it may become, for the extreme possible tension of gas as it is evolved from strata in the coal measures was not as yet exactly known.

The experiments we have alluded to prove with certainty that in districts with a floor such as we have described, and which gives off gas in the ordinary course of working, there was a force underneath which was equal to 135 lbs. per square inch above the weight of the atmosphere; and without some tapping or release of such a dangerous power, either by slips in the hard floor, or by bore-holes, or by other means, the mine was, as it were, on the top of a heavily-pressed boiler; and as the coal was worked the resisting power of the strata was reduced till an outburst took place. Mr. F. HURD carried out some experiments which lasted upwards of four years, he tells us, which consisted of cement 2½ in. in thickness and 4 square feet of surface being acted upon. The result showed that during the period named the exposure of the ordinary gas coal upon the 4 square feet of surface ended in the upheaving of solid cement to the extent of 2½ in.; when it had upheaved to that extent it shattered to pieces. Cement was used because it was considered the most suitable. These upheavals have not been unknown in the North of England, although but little has been heard of them, for at one colliery, some years ago, it was not an uncommon thing for the gas to burst from the floor and upheave many corfs of stone, and they have had to pipe the gas away from the blowers, the outbursts having lasted for weeks and sometimes for months. Some persons favoured the idea that the gas came from the decomposition of carbonaceous matter. Still they found gas that was originally in the coal had escaped from it and entered into cavities in the strata, where it remained at an enormous pressure; and so soon as that pressure was removed the gas came away. It was found in distinct bags, which was shown by boring, when gas was let off in some instances, and in others there was no gas at all. That these outbursts have resulted in some of the most

serious explosions that have taken place is considered as more than probable by many of our ablest mining engineers. As to their actual cause, the general conclusion is, although not accurately settled, that the gas existed at a certain pressure under certain strata, and was confined there so long as the pressure of that strata was greater than the pressure of the gas. The matter is a most important and interesting one, and it is to be hoped will receive more attention than it has hitherto done on the part of our mining engineers.

## OUR COAL ABROAD.

Our coal exports appear to be continually extending. In September this year, for instance, we exported 1,688,606 tons, as compared with 1,529,287 tons in September, 1879, and 1,314,599 tons in September, 1878. Similarly the shipments of coal in September for the use of steamers engaged in foreign trade amounted to 160,710 tons, as compared with 414,218 tons in September, 1879, and 352,413 tons in September, 1878. If we extend the comparison to the nine months of the last three years the results are still more decided and striking. Including shipments for the use of steamers engaged in foreign trade, we find that our aggregate coal exports to September 30 this year amounted to 17,643,362 tons, as compared with 15,532,598 tons in the corresponding period of 1879, and 14,922,837 tons in the corresponding period of 1878. Comparing this year with 1879, we find that an increase of rather more than 2,000,000 tons has been already established in the exports in 1880, and by the time that the year has fully run its course, the advance for the twelve months will be found to be not far short of 2,500,000 tons. This strikes us as a very important and interesting fact. The external consumption of our coal bids fair to attain an aggregate this year of 23,000,000 tons, and should the increase in the exports continue at its present rate for another decade, we shall be sending abroad 48,000,000 tons per annum by 1890.

We have heard from time to time of efforts made by France and Germany to render themselves independent of English coal supplies but hitherto those efforts have been utter failures. Thus 25 years since we used to send the French about 1,000,000 tons of our coal annually; this year the corresponding total appears likely to be carried to at least 3,500,000 tons. At any rate, our coal exports to France to September 30 this year attained an actual aggregate of 2,716,462 tons, as compared with 2,423,155 tons in the corresponding period of 1879, and 2,276,990 tons in the corresponding period of 1878. The increase appears to have been almost continuous month by month, although it was of no great importance in September. If we turn to Germany we also find a marked increase in the German consumption of our coal this year. Our coal shipments to German ports in the first nine months of 1878 amounted to 1,434,209 tons, while they rose in the first nine months of 1879 to 1,504,565 tons, and in the first nine months of 1880 to 1,724,007 tons. Considering the great amount of coal existing in France and Germany—considering also the very respectable energy with which coal is worked in Germany, although the French still do not take very kindly to coal mining—we can but regard the continued increase in the consumption of English coal among the French and the Germans as very remarkable. Price and transit facilities have, of course, a good deal to do with it, but the great cause appears to be the disinclination of continental to seriously apply themselves to the utilisation of their native coal resources so long as they can obtain decent supplies of English coal.

We see another example of this in Russia. The CZAR's great empire contains so much coal that a party of Philadelphians recently crossed the Atlantic and had an interview with his Imperial Majesty himself with reference to the working of coal in some of the southern Russian provinces. The Philadelphians arrived at the conclusion that dollars were to be made by the extraction of the coal in question, and something will probably result from their recent voyage. Russia has also an extensive railway system, and good railway communication must have a powerful tendency to encourage energetic coal mining. But still nothing seems to render Russia independent of English coal supplies. In September this year we exported 193,410 tons of our coal to Russia, whilst our corresponding shipments in the same direction in September, 1879, amounted to 160,860 tons, and in September, 1878, to 128,444 tons. In the nine months ending September 30 this year the aggregate exports were 1,317,979 tons, as compared with 1,058,165 tons in the corresponding period of 1879, and 1,101,917 tons in the corresponding period of 1878. Thus in all directions our neighbours are using up more and more of our coal. Whether this is, after all, a real advantage is another matter.

**GOLD IN SURINAM**.—The Government Gazette of Surinam, dated Sept. 7, notified the export of gold from that colony as follows:—

1876	.....	Guilders	49,900
1877	.....		293,880
1878	.....		407,059
1879	.....		679,914
First half, 1880	.....		390,697
July	.....		75,322
August	.....		85,343
September	.....		34,674

The total value of the export of gold from 1876 to Sept., 1880, is 2,066,789 guilders, or 172,232L 8s. 4d. sterling.

**THE MINES REGULATION ACT**.—At Nuneaton on Thursday, T. B. Kydd and Andrew Boosie, agent and manager at Griff Colliery, belonging to Mr. Newdegate, M.P., were charged with breaches of the Mines Regulation Act by neglecting to provide sufficient ventilation to dilute and render harmless the noxious gases in the workings. Recently, while a man was working in the pit with a naked light, an explosion occurred, and as a consequence these proceedings were instituted by the Secretary of State. The defendants, who appeared to have improved the ventilation subsequent to the explosion, were each fined 2l.

**THE EMPLOYERS' LIABILITY BILL**.—The coal trade will probably be as much affected as any other branch of industry by the operation of the Employers' Liability Act, and a very numerously attended meeting of the South Lancashire and Cheshire Coalowners' Association, called specially for the consideration of the question, was held in Manchester, on Wednesday, when a committee was appointed to consider and report to future meetings the best course to be adopted in view of the altered conditions which have been introduced in the relations between the coalowners and their employees.

**MINING INSTITUTE OF CORNWALL**.—It is beyond question that the value of commendation depends upon the position and acquirements of those by whom it is given, since what would be regarded as excellent by an incompetent judge might be regarded by those intimately acquainted with what had already been done in the same direction, or what could be done by other means, as altogether unworthy of consideration. There is an old story of an engineer living who truly pronounced a really worthless lode "the finest tin lode he had ever seen in his life," and the capitalists for whom the report was made readily expended money upon it, because they were unacquainted with the additional, though perhaps not unimportant fact that the engineer had never before seen a tin lode of any kind. Now, the Mining Institute of Cornwall being composed exclusively of men practically acquainted with Cornish mining engineering—the president, for example, is Capt. Josiah Thomas, of Dolcoath, and the vice-presidents Capts. William Teague and R. H. Williams—they will be no doubt that they must well know what has been, and what can be, done in practical mining in their district, and as it is announced that the Institute's next exhibition of mining machinery models of machinery suitable for mining purposes, tools, &c., will be held at Truro towards the end of next month it will obviously be the advantage of inventors and manufacturers to compete for the medals and certificates of merit which will be awarded to successful exhibitors, since from the undoubtedly competence of the judges to give an opinion upon the particular subject undertaken by them better recommendation to intending purchasers than the obtaining of a Mining Institute prize could be offered. The mode by which intending exhibitors can secure admission is advertised in another

column, and it is cordially to be hoped that the exhibition will prove a great success.

Mr. RALPH THOMAS BODLEY, of the Bristol Mining School and the Royal School of Mines, has been elected to the Millarn Natural Science Scholarship at Trinity College Oxford. The scholarship is tenable for four years during residence, and is of the annual value of 80*l.*

Mr. WYLD, of Charing Cross, Geographer to the Queen, will shortly publish an elaborate map of the Gold Fields and Gold Reefs of Southern India.

**BESSEMER STEEL.**—The favour with which Bessemer steel is regarded may be judged from the fact that 2,864,605 tons were produced last year. Of this, America leads with 928,972 tons, and Great Britain 834,511 tons, the balance being distributed over Germany, France, Belgium, Austria, Sweden, and Russia.

#### MINING IN SOUTH AUSTRALIA.

*Adelaide, Sept. 12.*—Mining is still labouring under the effects of low prices, but, nevertheless, a good deal is being done on Yorke's Peninsula at the great mines Moonta, Hamley, and Wallaroo. The Kurilla also continues to hold its own, and the proprietors of the old "New Cornwall Mine" are making vigorous efforts to re-open that once valuable property. The ore had run out in places, but recent investigations show a very promising state of things for future operations. Several fine lodes and cross-courses have been traced in yet virgin country, and from the nature and quantity of the ore raised before the mine was "knocked" it is thought that it may yet prove itself one of the great mines of South Australia.

A new and rich discovery of copper is reported in a locality 70 miles north-east of the Burra, but which will shortly be within 30 miles of the railway. Splendid samples of ore, from 30 to 40 per cent. of copper, have been brought to Adelaide, but in the present state of things they cause little excitement. The recent discovery on the old Kapunda Mine property is a most important one, as it is in the centre of a large area of ground hitherto unworked. The ores are of the character originally found in this mine—good green and blue carbonates. If the price of copper should rise to 80*l.* mining will become lively at Kapunda, and business generally will receive a great impetus.

It is a matter for great regret that in a country like this, known to be rich in all the metallic ores, and in many precious stones also, we have no Government geologist or mineralogist, and the public generally are surprisingly apathetic regarding the wealth that lies beneath their feet. There is abundant opportunity for the safe investment of English or foreign capital in our gold reefs and silver-lead mines, as well as in copper mining. Gold is now known to be very extensively diffused throughout the colony in quartz reefs, from which  $\frac{1}{2}$  oz. to over 1 oz. of gold to the ton of stuff can be extracted. Half an ounce ought to pay well, but there are many reefs which have never been fairly opened which will yield much more. Our silver-lead mines too have yielded 60 to 80 per cent. of lead with 40 to 70 ozs. of silver to the ton. I hope the mention of these facts will attract the attention they deserve from mining adventurers in England. A company has just been formed to test our petroleum country near the Coorong, and there is every prospect of its success.

#### EXPLORING FOR COAL IN NATAL.

Sometime ago we mentioned that Mr. Frederick W. North, mining engineer of the Rowley Hall Colliery, near Dudley, and of various other enterprises in that locality, and son of Mr. William North, the ex-Mayor of Dudley, had left England for Natal to inspect and, in fact, explore the coal fields of that colony for the Colonial Government. This was an arrangement made by his Excellency Sir Henry Bulwer while Mr. North was making his inspection of the coal fields of Cape Colony upon a former visit to South Africa, and, had it not been for the outbreak of the Zulu war, with all its horrors, the exploration would ere this have been completed. Upon arrival in the colony Mr. North's previous experience in South African coal inspection was of service, and soon after landing at Durban, the only seaport of Natal, he left for the chief town, Pietermaritzburg, and the official head-quarters of the Government. It was the work of only a few days to fit out with provender and other necessaries the bullock wagon, drawn by sixteen oxen, which during his six months' tour of inspection would have to do duty as both coach and hotel. In addition to this cumbersome vehicle the needful mining and boring tools, with tents for sheltering both white and black labourers from sun and storm in a semi-tropical climate had to be loaded upon another wagon. All this needful equipment for a comparatively short journey and residence in an open country, without hotels, &c., being ready a start in quest of coal was made. The services of Mr. W. Molyneux, F.G.S., of Burton-on-Trent, who had accompanied the engineer from England in the hope that he may have been attached to the expedition were not accepted by the Government, and, therefore, his special geological knowledge could not be made available. The season was a dry one, and the journey towards Helpmakaar, Dundee, and Rorke's Drift, through the usual undulating country of South Africa, with bare hills and plains, and occasional valleys of worn hill sides, covered with low bush and mimosa thorn, was performed without incident, except perhaps the death of a tired ox, whose funeral was soon attended by hundreds of vultures; the summary dismissal of an insubordinate, or the sticking fast of the caravan amongst the boulders of some river beds.

Helpmakaar, a village of three or four houses, and a little Dutch church for occasional service, attended by the few Boers located upon isolated farms within a radius of 25 miles, was a commissariat centre during the war, as also was Dundee, and, of course, these places were the haunts of vagabonds who always hover about the rear of an army in the field. As a single specimen of their work it may be mentioned that even the little organ out of the Dutch church at the former place was stolen, and no trace of it has ever been found. Before reaching Helpmakaar little seams of coal were detected in the nearly horizontal strata, believed to correlate with the Permian and New Red Sandstone of Great Britain. These small seams occur across the country right up to the Buffalo river, at Rorke's Drift, the boundary of the colony, and the scene of the memorable defence of Chard and Bromhead, in the now ruined mission house. Even beyond the Buffalo and in the hills overlooking the fatal field of Isandhlwana the same strata, with little coals, was detected, and further northward, both in Zululand and in the colony of Natal, these deposits have been found to improve, and become workable seams of bituminous, semi-bituminous, or fat coking coals. The stay of a short winter's day in July upon the field of Isandhlwana, where the terrible disaster befel the 24th Regiment, was long enough to have noticed the bones of brave men from Warwickshire bleaching in the sun, and more sad to observe half-buried and some actually unburied bodies of English soldiers, who, having fought nobly and well, at least deserved at the hands of their countrymen and comrades "a soldier's grave." One poor fellow of the 1st 24th Regiment, J. Johnson, whose tunic showed the fatal assegai-wound in the chest, was found by Mr. North, and buried where he fell. The Empress Eugenie returning from her melancholy mission had only recently left the scene, and they had also found unburied bodies, and given them a resting place. The Zulus of the neighbourhood said—"There are plenty of them along the line of retreat; there is no no way now; why don't the English bury their dead; ours are all buried."

The best workable coal of Natal, so far as it is at present known, has been found to commence between Helpmakaar and Dundee, and very important coals, from 6 ft. to 12 ft. thick, extending over many miles of almost uninhabited country up to Newcastle, are now proved to exist. Mr. North estimates that within the colony of Natal he has already inspected 200,000,000 tons, suitable for either horse power, steam, locomotive, marine, or gas purposes. But, although coal at the present time is sold at Pietermaritzburg for 4*l.* per ton, and at Durban at 3*l.* per ton, and these coals could be put on the banks or into wagons at 10*s.* per ton, Mr. North thinks the deposits he has surveyed will be of no service until they are placed under railway

communication. The railway will be open to Maritzburg in a month or two; but the distance between Dundee and that town is still 130 miles, and from the capital to Newcastle 180 miles—therefore, about 150 miles of railway must be constructed before the colony can avail itself of what Mr. North considers to be "the only deposit, together with iron ore, with which Nature has endowed Natal."

#### EUREKA (NEVADA) DISTRICT.

Very pertinent to this and other mining districts where all prospecting is done by comparatively poor individual, or small parties of miners are the following remarks, culled from the New York Mining News of Sept. 10:

"Why is it (asks a correspondent) that parties who pretend to have really valuable mines are so anxious to sell them at mere nominal figures?" This question is easily answered without going beyond the realm of any man's understanding. The prospector is always a poor man. As soon as he has discovered a valuable claim and uncovered it a few feet, the expensive part of the work begins. Few shafts will turn out ore enough to pay the expense of sinking and timbering, and no miner who knows his business will undertake to drift or stope before he has reached a depth of from 50 ft. to 100 ft. Being destitute of money, and knowing that unless the ore is of more than ordinary richness, and the vein very wide, he will not be able to sink the shaft without assistance, the discoverer offers his prospect, or a large interest in it, for sale to the first man who will take it at a reasonable price. Unless the purchaser is familiar with mining he never thinks of the fact that the shaft must be timbered from top to bottom at a heavy expense. All these improvements cost money, and until the mine is well opened, which will not be before a depth of 300 ft., has been attained, no large profits need be looked for. Every prospector knows these facts, and for this reason, if destitute of means, he proceeds to sell his claim. By this means capital comes into possession of all the best mines in the country. Simply because it has the power which the prospector has not, and without which few mines can be put upon the market.

In the Eureka district, until lately without railway communication the state of things depicted above was particularly applicable. Now, however, a railway is open from Palisade to Eureka, giving direct communication with San Francisco on the west and Salt Lake and other cities to the east, much attention is being directed by enterprising mining adventurers in America to the resources of Eureka, and the attention of English and continental capitalists should also be called to the permanence of the ore resources, as shown by the work in all the mines there which have been practically worked by business men for an essentially business object—the making of money steadily and surely.

Among recent developments in this direction attention is called to the Titus Mine, for which the largest whim ever constructed in this district has just been completed. This mine is worked by private residents at Eureka, many of whom are said to be employees of the Richmond Company. This whim is estimated to be sufficient to work to a depth of 400 ft., and the work of sinking on this mine will be vigorously proceeded with. The president of a Chicago bank has just acquired the mining deeds of six locations in Antelope District, Eureka County, the consideration for each deed being \$50,000. The new shaft of the Eureka Consolidated Company was down 425 ft., and the two furnaces continue running smoothly with an ample supply of ore. The Albion Company were just about to sink their shaft an additional 100 feet, to get under the large body of ore recently discovered, and about which there had been a legal fight between that company and the Richmond Company. The Silver Connor hoisting works, not far from the Dunderberg and the Eagle Mines, were being repaired, and the Eureka Sentinel, of Sept. 21, remarks that "there was a lively application for patents on the mineral lands in Eureka and Prospect Mountain districts." One of the Ruby Company's furnaces (says the same paper) was being set in order under the superintendence of Mr. Dowlan, the company's smelter, preparatory to starting up, and from all accounts this company will have large ore supplies in November, when the drift from the 600 ft. station is completed to run under the ore body already reported. The Eagle Mines, sold to the Eureka (Nevada) Silver Mining Company, are in just such a position described in the New York Mining World. The prospectors are not rich men, and require capital to develop the mine, which they have, however, sunk to a depth of 300 ft. Abundant evidence is given of the ore producing capabilities of the mine, and even more can be said of the Williamsburg, from which ore was being taken and work going on at last dates.

The Eureka district is one which deserves greater attention than it has received. That such has only been delayed by the unfortunate preliminary experience of both the Richmond and Ruby Companies is the firm conviction of the most stable Eureka residents and merchants. These see the unfortunate results of the action of those who assumed to themselves the property of others, and buyers of mines need only take the usual business-like precautions to investigate the titles of their purchases to be certain of an undisturbed possession. The Courts at Eureka and the merchants will see justice done to those coming among them.

**ACCIDENTS IN MINES.**—At the Mining Institute of Scotland monthly meeting on Oct. 14—Mr. Ralph Moore, President, in the chair—Mr. J. T. Robson, Assistant-Inspector of Mines, read an able paper on "Falls of Roof and Sides," in which he considered how it was possible to reduce the number of fatalities from this cause, and gave a short description of the various conditions under which falls occur, the means taken for the prevention of accidents arising therefrom, and offered several suggestions for improvement. Without giving an opinion on the subject, the President remarked that he scarcely ever knew of a man being injured in the act of getting away from a piece of coal he was trying to bring down, nor while he was trying to bring down a stone from the roof. The most accidents happened when they were not expected, when people were not guarding against the dangers. It was remarkable to notice the excuses made to his colleague and he when accidents occurred and they examined into them. It was frequently said to both of them—"We told the man this was wrong, the fireman told the man so-and-so, and the man said when he got his hatch filled he would put up a prop;" but in nearly all cases it was the unexpected that happened. In regard to those lamentable cases of accident, not of fatalities, they had in his last report taken the trouble to collect the number of days men were idle, and some were 60 days and some were over 100 off work in consequence of falls. He held there was no doubt whatever but a fall of roof could be guarded against, and he thought they had great room for improvement in the matter of propping. Col. Austine regarded it as an astonishing statement the President had made, and there could not be a doubt as to the truth of it—that accidents from falls of the roof generally occurred from want of the proper precaution being taken before the accident happened. He strongly urged that the man who looked after the proper treecing should not simply say this should be done, but should never leave the place till it was done. He reminded them that in addition to their present responsibilities on account of accidents, after the new year there would be great deal more. In the course of the further discussion of the paper, the President stated that at Blantyre Collieries they had introduced into the special rules that props should be put up at certain distances, since which there had been no accident from falls, while there were several before. The discussion was adjourned, the President expressing the desire that it should be of an exhaustive character.

**IMPROVEMENT IN COLLIERIES TUBS.**—An ingenious arrangement for a constant automatic lubrication, and also for giving more freedom of action to the wheels of colliery tubs, &c., has just been devised and patented by Mr. JAMES REILLY, of the Globe Mahogany Chair Works, Pomona Gardens, Manchester. Colliery tubs as now generally constructed simply rest upon open bearings, which have to be constantly re-oiled, and being exposed to the dirt and dust quickly become clogged, which necessarily not only interferes with the free action of the wheels but greatly adds to the wear and tear upon the bearings. Mr. Reilly's invention does away with all these disadvantages, and may be briefly described as follows:—In the first place the wheels run loose upon the shaft or axletree, instead of being fixed as at present, and the boss of the wheel is so constructed as to form an oil-box containing a sufficient quantity of oil, which is supplied from the outside, to constantly lubricate the wheels for months without replacing. The outside of the boss, which has a solid end, is recessed beyond the end of the bearing to the extent of  $\frac{1}{2}$  of an inch to contain oil, whilst the inner portion of the boss is

bored through on the outer rim, and these holes, which also contain oil, communicate with a groove in the centre of the boss, which passes the oil on to the bearings. These apertures to the oil-box from the inside portion of the boss are tightly closed up by means of turned collars bolted over the holes, and as the outer portion of the boss, as already stated, is solid it will be seen that the oil-box is perfectly closed up from dirt and dust; in fact, nothing can get near it, and it is left free to act constantly upon the bearings through the flange in the centre of the boss. A further advantage is secured by the wheels being fitted loose on to the axletree, and allowed free action inside the boss. The tub, by the independent play of each wheel thus secured, can be turned readily in any direction, and round the sharpest curve, without the assistance of a turntable; indeed, such is the freedom of motion that a pair of wheels on a level surface will describe with difficulty a complete circle, or even a figure 8. Mr. Reilly also intends attaching to his patent wheels a counting indicator, which will record every time the tub has been tipped, and thus afford an effective check against the weighman on the pit bank.

#### REVIVAL OF MINING IN THE TAVISTOCK DISTRICT.

[FROM A CORRESPONDENT.]

The starting of the engine the week before last at the Devon Great United Mine will mark an important epoch in the history of the revival of mining enterprise in the Tavistock district. After having been suspended for a considerable time, operations have been resumed on this valuable property under the most promising auspices. There was never any question that the lodes in the sett are numerous and highly metalliferous. The suspension of the mine took place for two reasons—chiefly because of a dispute between the lords and the adventurers, and partly in consequence of a time of depression setting in. During the eight or ten years that the property was worked as the West Maria and Wheal Fortescue over 45,000*t.* worth of copper, arsenic, tin, and lead was raised. In order to develop the ground to the west of Devon Great Consols a shaft was sunk to the 50 fm. level, and a cross-cut was driven at the 40 and another at the 50 fm. level. At the 40 the cross-cut intersected the north lode, and rich ore was discovered, which was valued at 40*l.* to 60*l.* per fathom. The lode was found to incline eastward, and it was deemed desirable to sink a shaft between the 30 and 40, and almost immediately a course of ore was discovered. Then came the dispute which culminated in law proceedings, and operations were suspended. The mine has now been re-started under the name of Devon Great United, taking in Wheal William, which is in Cornwall, immediately adjoining Wheal Maria and Wheal Fortescue, and separated from them only by the small River Tamar.

The mine is most favourably situated as regards the geological characteristics of its surroundings. As Mr. PETER WATSON and Mr. MOSES BAWDEN—who probably know more about the geological and mineralogical features of the district than any men living—rightly pointed out to the shareholders a fortnight since on the mine, in looking for mineral veins search must be made within a certain distance of certain stratifications, and they illustrated the truth of their observations by pointing out that the mines of Cornwall and Devon are found within a certain range of the ore-bearing granite hills which run through these two counties. Regarded from this practical standpoint, the position of the Devon Great United Mines is all that can be desired. In Cornwall copper and tin have been found richest where the strata of granite and clay-slate unite, and the Devon Great United is located on the east and west of the River Tamar, where the granite of Kitt Hill, Cornwall, slopes down to one side of the river, and the clay-slate rises boldly up on the other side. On the Cornish side, clustering round Kitt Hill, or in the immediate vicinity, are Drake Walls, Hingston Down, Gunnislake, and other well-known mines. On the Devon side, and in this hill of clay-slate, has been found that immense body of copper ore which has been a source of such enormous profits in Devon Great Consols.

One of the earliest discoveries of copper on the Devon side of the river was in Old Wheal Friendship, which was of great importance and highly profitable, the dividends declared amounting to over 300,000*l.* Since the time that Wheal Friendship was brought into a state of prosperity a large number of mines have sprung up in the locality, some of which have been highly profitable, and nearly the whole more or less productive. But in 1844 the discovery referred to above was made, which threw all the other mines in the district into the shade. In that year copper was struck in the ground which has since become so famous under the name of Devon Great Consols. By accident the mine was opened on a rich portion of the lode, and ore was found at less than 20 fms. from surface. A company was formed in 1824 shares of 1*l.* each, and within seven years they sold 80,000 tons of copper, which gave the Duke of Bedford nearly 40,000*l.* in dues, and to the shareholders about 180,000*l.* in dividends, in addition to providing a sum of 120,000*l.*, which was expended in the development of the mine. These were the palmy days of Devon Great Consols. At one time the 1*l.* shares touched 800*l.* each. The excitement which existed in the district is still fresh in the memory of the older residents. In Tavistock the amount of speculation and even gambling in the shares was something enormous. The Bedford Hotel was the chief place of assembly for the buyers and sellers of the shares, and if the walls of the large room of that well-known hostelry could speak, they could tell strange doings of some of the fortunate speculators. There are men living who can vouch for the fact that one lucky individual lighted his pipe with a 5*l.* note, and another ate a note of like value placed sandwich fashion between bread and butter. Other wild freaks were indulged in by those who had made rapid fortunes out of their transactions in the shares of Devon Great Consols. In the next 15 years—from the beginning of March, 1851, to March, 1865—there were produced and sold 343,182 tons of ore, the Duke of Bedford receiving as dues the sum of 194,300*l.*, and the shareholders 797,184*l.* as dividends. In addition to the receipt of dues the Duke of Bedford was paid 22,052*l.* for the renewal of the lease and for land destroyed, making altogether a sum of 216,383*l.* Up to March last copper ore to the amount altogether of over 3,500,000*l.* had been sold, over 300,000*l.* had been paid in royalties, &c., to the Duke of Bedford, and 1,200,000*l.* paid in dividends to the shareholders in addition to the enormous amount expended out of revenue on plant, machinery, &c.

As is well known, some time ago the shareholders of Devon Great Consols fell upon evil times, and notwithstanding the known richness of the mine dividends ceased, and at one time it really seemed that this magnificent property would be brought to a standstill. Whether this reverse of fortune was caused by the depression in the metal trade, or whether the system of management pursued in any way conducted to it, is not necessary now to enquire. What is of more importance to know is that just at the nick of time, when things were looking about as black as they possibly could, Mr. Peter Watson was induced to undertake the administration of affairs, and under his energetic and judicious supervision, ably and loyally backed by the heads of departments at the mine, confidence has been restored to the shareholders, harmony and goodwill amongst the workpeople, and splendid quarterly dividends have been resumed, with every prospect of their increasing in future.

Some of the facts narrated above will, no doubt, read like an oft-told tale to many persons who have been acquainted with the past doings of Devon Great Consols; but it must be remembered that there may be many shareholders in Devon Great United who are not so well up in the subject, and the details given above may be interesting to them, and enable them to form a better judgment of the value of their own property. Because, of course, the prospective value and success of Devon Great United lie in the fact that the lodes which have proved so enormously rich in Devon Great Consols run direct into Devon Great United. The enterprise is, therefore, placed beyond the pale of mere speculation. The works have been recommended, not to try and find ore in a district believed to be rich, but hitherto unproven, but sinking will be immediately proceeded with on lodes which have proved immensely valuable within almost a stone-throw's distance. Therefore, the work will not be subject to those vicissitudes which attend operations on new and undeveloped districts.

Not the least important point in connection with the re-starting of the mine as Devon Great United is to be found in the fact that the operations will be carried on under the management of men who have

devoted all their lives to the occupation of mining, and who from their great experience and high moral character have gained the confidence of all who have been associated with them in other undertakings. In Mr. Peter Watson the shareholders possess a Chairman who by his success in other undertakings—some of them taken up at times when they were in sorry straits—has proved his right to claim the confidence not only of the shareholders, but also those employed in the mine. Mr. Peter Watson is supported by a board composed of gentlemen of influence and business experience. At the mine there is Mr. Moses Bawden as purser, and Capt. Isaac Richards as manager with Capt. Clemo; and it is almost needless to remark that no three men could be found possessing a greater knowledge of mining matters in the district, and certainly none who command in a greater degree the respect and confidence of all around them. Most if not all the old heads of departments remain, and the work-people, since Mr. Peter Watson has had the management, seem to be working contentedly. Therefore, the Devon Great United starts under all those conditions which are essential to success. That it will prove a success, and that in the near future, no one who knows the property for a moment doubts. If through any of those unforeseen circumstances which frequently mar the success of all human undertakings the result should turn out otherwise than is anticipated, at any rate the shareholders will have the satisfaction of knowing that all that experience and care can suggest has been done to attain the results they desire.

Perhaps one word of caution may not be out of place. Mr. Peter Watson, whilst openly stating his belief regarding the excellent future of Devon Great United, has always warned shareholders in mines that they must not be too sanguine as to results, and must make allowance for the altered circumstances of the times. In a word, they must scarcely expect a Devon Great Consols, at any rate as regards the enormous dividends paid by that company. It must be borne in mind that the conditions of the metal market are greatly changed during the past 15 or 20 years. Great Britain no longer monopolises, to the extent she formerly did, the metal markets of the world. Considerable quantities of copper are being imported from abroad from mines which have been opened up in different parts of the world—notably from Mexico, Chili, Cape of Good Hope, Spain, and Australia. There are those who think that when a period of brisk trade arrives the quantity of foreign copper will not be sufficient to exercise any appreciable effect upon the price of that metal. They ground their belief chiefly on two facts—first, that up to the present time the foreign copper deposits have been chiefly worked at surface, and that as depth is attained the extra cost will render it less easy to compete with English copper; and, secondly, that the number of purposes for which metals are employed has increased to a wonderful extent during the past few years. On the other hand, it must be remembered that rich metalliferous deposits are known to exist in regions which are at present wholly or partly inaccessible for the purposes of mining. The whole history of the past shows that where a great demand exists for an article there is always to be found capital and enterprise to meet the demand. However, there is no doubt that the problem as to the future of the metal markets of the world is one of the most difficult to solve which it is possible to conceive. One thing is beyond doubt, and that is that the price of metals is now, and has been for a considerable time past, abnormally low, and seeing the vastly increased number of purposes for which metals are now employed, it would not be unfair to assume that the tendency of prices will be upward rather than downward. That the high prices which ruled some years ago will ever return may be doubted. At any rate, Englishmen are not prone to be behindhand in the opening up and development of industrial undertakings; and though the days of enormous mining profits may be passed, there is no reason why fair, and even very large returns, should not be made on the judicious outlay of capital in home mining enterprise.

**PROFESSOR RANKINE.**—So many are indebted to the laborious and valuable researches of the late Prof. W. J. Macquorn Rankine for knowledge which has materially assisted them to attain the professional reputation they now occupy, and so many have had the advantage of the application in engineering works which have been carried out for them of the knowledge diffused by him, that the announcement of the publication of a memorial volume embracing a selection from the "Miscellaneous Scientific Papers, from the Transactions and Proceedings of the Royal and other Scientific and Philosophical Societies and the Scientific and Engineering Journals" contributed by W. J. Macquorn Rankine, C.E., LL.D., F.R.S., late Regius Professor of Civil Engineering and Mechanics in the University of Glasgow, will give general satisfaction. The work, which will be published by Messrs. Charles Griffin and Co., of Stationers' Hall-court, is now nearly ready to be issued, and is intended to be in every way worthy of the object; it will contain many papers of great weight and value, at present to be found only in the records of the various scientific and philosophical societies, and in the scientific and engineering journals, to which they were originally contributed, and, therefore, inaccessible to the majority of scientific workers. It is believed that the bringing together in one volume of these successive important contributions to science will be acceptable to thinkers and students generally, and that the collection—exhibiting as it does not only the extreme originality and depth of the author as a mathematical and scientific investigator, but also the many sidedness of his genius—will form (as was intended by the circle of friends by whom the plan of the volume was at first conceived) a fitting memorial of one of the most distinguished men our century has produced. The editing of the volume has been undertaken by Mr. W. J. Millar, C.E., a former student and friend of the Professor, and now secretary to the Institution of Engineers and Shipbuilders in Scotland, and the introductory biographical sketch has been written by the Professor of Natural Philosophy in the University of Edinburgh (Mr. P. G. Tait, M.A.), so that there can be no doubt as to the manner in which the task has been performed. As the work will be of much intrinsic value from the information contained, as well as the supplying a lasting memorial of him to whose genius it is dedicated, it cannot fail to be widely appreciated by engineers, and to secure a wide circulation.

**PRACTICAL BLOWPIPE ASSAYING.**—A very valuable little volume, by a practical man for practical men, has just been completed by Mr. GEORGE ATTWOOD, F.G.S., A.I.C.E., and will doubtless be appreciated by those for whom it is intended. A detailed notice of the book, which is published by Messrs. Sampson Low and Co., of Fleet-street, must be deferred until next week; but in the meantime it may be stated that Mr. Attwood gives abundant evidence that his 18 years' experience in mining and prospecting in foreign countries has taught him not only the value of the blowpipe in the field where no other method of assaying is available, but how to turn it to the best account in every case. A short introduction is followed by a description of the mouth-blowpipe, apparatus, and reagents, &c.; in the second part the most approved method of detecting each particular element is given, a peculiar though novel and practically useful classification being adopted, which prevents a large amount of useless forging inevitable when the usual arrangement is followed. Commencing with the metals of the alkalies, he works his way up to mercury and platinum and then deals with the non-metals; but the new feature is that only those commonly met with are here included, the rare, perhaps imaginary metals, being placed all together at the end of the chapter; so that whilst didymium, niobium, thallium, and other uncommercial eccentricities are left to themselves, sodium, aluminium, tin, silver, gold, chromium, &c., are brought nearer together. It must be distinctly understood that the work is for blowpipe assayers and not for blowpipe analysts, which accounts for the absence of any table to enable the reader to interpret a blow-pipe indication so that he can at once ascertain whether bismuth be present, and he may, if he obtain an unexpected reaction, discover what it indicates by carefully reading the chapter. The third part treats of the assay of silver, gold, mercury, copper, lead, other metals, and coal, and the fourth part embodies some useful tables for facilitating the determination of the commercial value of the mineral assayed, and there is an excellent index. The author acknowledges the assistance he has received from Prof. John Morris in correcting proofs and revising, and this will be a sufficient guarantee for accuracy.

The work as a whole is worthy of high commendation and will be equally useful in the laboratory of the technical school and in the knapsack of the prospector.

SCIENTIFIC ENGLISH READER FOR GERMANS.—Most business men who have studied a foreign language have experienced the difficulty of comprehending the various technical words and expressions met with in correspondence and published works of most importance to them, but Mr. Brockaus, of Leipzig, has just published the first part of a volume by Dr. Wersoven intended especially "für ältere technische Lehranstalten," but which will also be useful to those studying without a master. It consists of extracts from the writings of Roscoe Wilson, Knight, Lockyer, Fleeming, Jenkin, and various encyclopaedia articles, with notes for enabling the German student to translate them into the old Strasburg dialect or into modern German phonetics, which, however, being new in Germany are not always used, Dr. Wersoven sometimes retaining the *h*, and spelling correctly so that Teil on the title page becomes Theil in the body of the work, where there are also Strahlungsvermögen, altherühmte, and innumerable other words correctly spelled. Well may it be regretted that a few conceited pedants should be able to do so much toward rendering all the rich and brilliant literature of Germany comparatively useless to future generations by attempting to change an orthography already almost phonetic, and that even such men as Dr. Wersoven should be compelled to follow so bad an example. Henceforth one must write "Rumkorf's coil" and the like, and as it is improbable that the illiterate will trouble themselves to distinguish the aspirate from the silent *h*, it may be expected that so useless a letter will soon be banished altogether. The extracts are selected with much judgment, and as the book is only useful to and to be used by Germans, the occasional introduction of the new orthography which will probably only be a nine days' wonder, will not prevent its being patronised in Germany. The Phraseological Technical Vocabulary already published by Dr. Wersoven may be regarded as

"ROUND THE FIRE-SIDE" is a most interesting series of papers forming the winter number of "Society." They are well illustrated and cannot fail to amuse all who are desirous of reading carefully prepared light literature. We may add that the periodical "Society" is in itself a marvel of cheapness, and very far beyond many of its contemporaries in the nature of its information and the style of its writing.

SOUTH WALES INSTITUTE OF ENGINEERS.

An ordinary general meeting of members was held at the Royal Hotel, Cardiff, on Thursday. The chair was taken by the President (Mr. Jas. McMurtue). The attendance was large. The minutes of the last meeting were read and confirmed. Several candidates for admission were balloted for and declared elected. Several new members previously elected were formally admitted by the President. The nominations for the annual election of office bearers took place. All the retiring members of the Council were re-nominated, with the addition of Mr. Peel in the place of Mr. H. V. Trump. Mr. Hart Huxham, F.G.S., M. Inst. C.E., was also again nominated as secretary. The question of the desirability or otherwise of applying for a Royal Charter of Incorporation was brought before the meeting and discussed at some length, but eventually adjourned till the next meeting. The following papers read at the last meeting, were discussed. "On Safety Hooks and Safety Cages," by Mr. Stephen Humble, and an appendix on "Safety Hooks and Safety Cages," by Mr. Hart Huxham, F.G.S., M. Inst. C.E. The discussion on Mr. Handel Cossbaum's admirable paper on some of the geological problems of the Bristol coalfield was adjourned, as was also the discussion on "Diving and Diving Machines: with a description of Fleur's diving and breathing apparatus and Foster and Fleur's submarine and safety mining lamp for conducting operations under water or in noxious gases, entirely independent of any communication with the atmosphere;" a paper by the secretary, Mr. Hart Huxham, read at the last meeting; a paper by Mr. Thomas Joseph on "The Clayband Ironstone or Mine of the Northern Outcrop of the South Wales Coalfield;" and another by Mr. W. D. Wright on "Underground Horses," were taken as read and ordered to be printed with the proceedings of the Institute. At the conclusion of the meeting the members dined together at the Royal Hotel, under the Presidency of Mr. McMurtue.

## PRIMING FOR MINE CARTRIDGES.

A cap or priming, by means of which the blasting charge of a mine may be exploded without the employment of a light, and which also prevents the projection of flame to the exterior when the priming is ignited, has been invented by Mr. E. RUGGIERI, of Paris; it is particularly adapted for use in mines subject to fire-damp, but is also applicable otherwise for use in blasting purposes, and to the caps and cartridges used for firearms. In applying the invention to the explosion of blasting cartridges a tube is employed, by preference copper, one end of which is closed, but formed with a central orifice for the passage of a rod carrying a serrated extremity for the ignition of the fulminate by friction. The fulminate is contained within an internal tube, which is surrounded with a cardboard tube, the latter being in its turn enclosed by the external tube before referred to, and the rod of the igniter also passes through the centre of the fulminate. Within the external tube, at its base or outer end, and between it and the end of the fulminate tube, is placed sandstone powder, pulverised glass, or any other suitable inert matter contained between two washers of india-rubber, or other suitable material, the whole forming a tight joint, so as to prevent the egress of the flame at the time of igniting the fulminate.

The washer nearest to the igniter bears against a shoulder formed by a contraction of the external tube for the purpose of preventing this washer from compressing the pulverised material contained between the washers, as hereinbefore described, and rendering the same too compact when the rod of the igniter is pulled. The external tube is mounted upon a cardboard cylinder of the requisite length containing a central quick match. In carrying out the operations of blasting, the cap thus constructed is fixed at the entrance of a hole in the mine charged in the ordinary manner, and the rod of the igniter (which may be operated by means of a cord from a distance) is pulled, whereby the fulminate is ignited under the action of the serrated extremity of the rod. The match is thus lighted and projected to the end of the hole in the mine, thus exploding the charge of powder, whilst by the mode of maintaining a tight joint, hereinbefore described, any escape of the flame from the ignition of the

**SIOUX CITY INDUSTRIAL MACHINERY**

A rotary engine driven by compressed air so arranged as to put in motion a piston rod to drive a pick or chisel is proposed by Mr. CHARLES MOREE, of Boston, U.S., as a coal-cutting machine. In practice he provides an ordinary pneumatic rotary engine in a suitable case, which case is made a part of an air-chamber and a cylinder. A valve is placed on the upper part of the said cylinder, and has two ports communicating with it, both of which alternately take air from below the said valve to the cylinder and alternately exhaust air into the two other ports, which communicate with pipes at the side of the cylinder; the said valve has imparted to it a reciprocating motion by a "crazy wheel" on the shaft of the rotary engine, the said wheel operating in a groove which is formed in the top of a knuckle-joint countersunk into the top of the aforesaid valve. On the end of the cylinder there is formed a serrated or grooved bearing, on which is placed a sleeve arranged to be rotated by a pinion. This pinion is hung upon a shaft running longitudinally with the cylinder, and is operated by a crank to rotate the pick or cutting tool. The piston-rod is round in transverse section, excepting for a portion of its length at one end which is square, and passes through a collar held to the outer end of the said sleeve by a set-screw. The pick or tool is held to the square part of the piston-rod by a socket-joint and a key, and may be detached by driving a key through a hole which is provided and bearing against the end of the shank of the pick in the socket. Wheels are provided supporting the machine, which is held to it by work by one or more ratchet wheels operated by a dog or pawl.

crank or wheel is provided on the outer end of the shaft of the rotary engine to start the latter off its centre. The exhaust pipes have supports, and on them are placed collars, which on being turned allow a greater or less exhaust of air.

In the operation of the machine air is taken in through a pipe, and the amount thereof is controlled by a valve in this pipe. The air so entering the chamber passes to the rotary engine by means of a port, and is discharged at another port in the ordinary manner of pneumatic rotary engines. The crazy wheel will give a reciprocating movement to the valve on the cylinder, and this valve when in one position exhausts air at one of the said ports upward into another of the said ports in the valve, from whence it passes out at the discharge pipe which is at the side of the cylinder and connects with said port. Air is now taken in at the port at the opposite end of the cylinder, the ports acting alternately to take in and discharge air, there being an exhaust pipe to each of the two ports in connection therewith. This puts the piston in motion to give a reciprocating movement to the pick or tool. To avoid the concussion in the movement of the piston, and to cushion the latter, also to cushion the strokes of the pick, india-rubber cushions are placed in the ends of the cylinder.

## NEW GAS-HEATING FURNACE.

In the laboratory of the chemist the gas furnaces and burners manufactured by Mr. T. Fletcher, of Warrington, are so generally known and appreciated that it is not surprising to find he has turned his attention to the production of a gas-heating burner adapted to general purposes. It need scarcely be stated that all these gas-heating burners are modifications of Bunsen's, the flame being produced not by the mere combustion of the gas but by using an explosive mixture of gas and air; but the important modifications which have been introduced by various manufacturers have removed the objection of an explosion upon the sudden change of the gas supply, and just in the same manner as it was found that better results were obtained with gas-illuminating burners by reducing the pressure—which is really the secret of all the economising and regulating burners—so it has been found that what are practically low-pressure Bunsen burners are at once the most economical and the most efficient for general purposes. Nothing material, however, was done towards popularising the aerated gas burner until Mr. Wallace, of Manchester, introduced his burner, which consisted of an upright tube open at the bottom, with a small gas jet underneath pointing directly upwards, the top of the tube being covered with a perforated copper cap. The rush of the air from the jet carries with it a large quantity of air, which with a gas jet of suitable size produces an explosive mixture, which is burned above the gauze, a steadily burning solid flame requiring no external air supply being the result.

Almost the only objection was that an inconveniently long tube was necessary when large and powerful flames were required, and this inconvenience was removed by Mr. T. Fletcher, of Warrington, by placing the gas injection jet at one end of an open horizontal tube, the other end of which opened into a box, which could be made of almost any size, with a gauze or perforated top. The flame produced is perfectly solid to the centre, intensely hot, and quite odourless. It is said to possess from three to four times the power of any burner of similar appearance; and although this could not be confirmed without a comparative test, there seems to be no reason to doubt it, especially as Mr. Fletcher has probably ascertained the relative heating power by actual trial. Anything more simple than the new solid flame burner could scarcely be wished for, and in the sample forwarded by Mr. Fletcher, and which can be examined in the *Mining Journal* office, there is absolutely nothing which can with ordinary care get damaged or displaced. The body of the burner is the tube, half globe, &c., are cast in one piece, so that there is no joint—hence leakage is impossible—and as the bottoms of the tube and of the globe are level, even the spilling of liquid into the burner causes no inconvenience, as it at once flows out at the side end. The burner unquestionably surpasses any gas-heating lamp yet introduced, and as it has been found by actual experiments to give a duty higher than the calculated theoretical maximum for the gas consumed it certainly ought to come largely into use. The only part at all subject to wear is the gauze, or, to be more accurate, the perforated copper dome, and even this could be renewed at the cost of a few pence, and without difficulty, so that Mr. Fletcher may fairly be congratulated upon the great advance in heating by gas which he has made.

**MAKING HARD AND SOFT STEEL.**—The improved furnace invented by Messrs. S. and D. THOMAS, of Trowell, Notts, is constructed at the sides, front, and back of water bushes, connected together so as to allow of a current or currents of cold water to pass through them; at one end of the furnace is a space for fuel, and at the opposite end of the furnace is a chamber heated from the flues of the furnace; this chamber contains pipes through which a blast of heat is forced, the blast entering the furnace at the sides, end, and top. The fuel chamber is supplied with a blast of cold air from under the fire-bars. The top of the furnace is arched in with fire-brick, and the whole of the walls are of fire-brick enclosed in cast-iron plates bolted together and provided with openings closed by cover plates; the bottom of the furnace is of cast-iron plates, on the underside of which jets of water play. A furnace so constructed they line with powdered flint at the sides and on the bottom to a suitable depth, and upon this they place scrap-iron and pig-iron in suitable proportions to make hard steel or fine grain iron, and pig-iron make soft steel.

**IMPROVED WHITE CEMENT.**—In the manufacture of a cheap white cement which sets rapidly and furnishes a dry white surface ready once to receive colour or decoration, Mr. J. C. BLOOMFIELD, of Caldwell, proposes to employ as the base of the cement a lime which burns milk-white, and having calcined it he adds about 5 per cent. of sulphate of lime, such as plaster of Paris, or of other phosphates that are not of a deliquescent character, or of mixtures of these. He reduces the product to powder; with this he thoroughly mingles about its own weight of ground flint or silica, adding about half of the silica ground to an impalpable powder, and afterwards the other half of the silica ground fine.

**WHEAL COATES.**—One of the directors (Mr. Ripley), the senior and the company's engineer, have visited the mine, and Mr. Ripley's report has been presented, and sent out with a notice of a dividend of 2s. 6d. per share, payable on Nov. 15. The report is superseded so far as the practical portion is concerned, by that of Capt. MacLennan, on which it is based, and which appears in another column. Mr. Ripley considers the whole surface works in first-rate order, and judging from present appearances, the shareholders may have no cause for anxiety.

**BWLCH UNITED.**—Owing to a scarcity of water, and the lossing of one of the connecting rods, the work upon the dressing has been impeded; the latter of these difficulties has been remedied, but a smaller parcel of silver-lead than anticipated has in consequence been sent to market; this, however, some rain to serve although, under the circumstances, the progress in dressing is not as great as might be. A discovery of much importance is reported in the 55, spreading

**WEST LISBURNE.**—Under the direction of Capt. Nicholas Pease, and until the arrival of the manager, the preparatory work of setting the shafts and unwatering the mine, together with the necessary surface work, is being vigorously proceeded with. The new 30-horse power engine, advertised for in last week's Journal will probably be selected and purchased within the next few days, and will be placed in the mine without delay, when the mine will be unwatered throughout, and extensive operations immediately proceeded with.

**GREAT HOLWAY.**—We are happy to state that this week a discovery has been made at the Great Holway Lead Mine, Holwell, and every reason to believe that the vein now dropped upon will be a large one. We congratulate the present company on their success. They have shown great energy and enterprise, and we trust they will now be richly rewarded for the heroic labour they have displayed. The discovery must be highly gratifying to the leading pivot and shareholder of the company, Mr. E. J. Bartlett, of London, who from first to last, despite all difficulties, has had for his motto "Success or

## COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.  
DISTRICT UNDER THE CHARGE OF WILLIAM ALEXANDER, Esq.,  
H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, will be HELD on the 25th and 27th days of November next, and CANDIDATES INTENDING TO PRESENT THEMSELVES AT SUCH EXAMINATION must, on or before the 20th day of November, notify such intention to the Secretary of the Board of the above-mentioned District, from whom all information as to particulars can be obtained.

By order of the Board,

CLUNY MACPHERSON, Secretary,  
135, St. Vincent-street, Glasgow.

S.E.—Persons who do not reside within the District are equally eligible for examination with those who do.

## THE MINING INSTITUTE OF CORNWALL.

PRESIDENT:  
JOSIAH THOMAS, Esq.

VICE-PRESIDENTS:

WILLIAM TEAGUE, Esq. | R. H. WILLIAMS, Esq.

THE NEXT EXHIBITION OF MINING MACHINERY, MODELS OF MACHINERY suitable for Mining Purposes, TOOLS, &c., will be held at TRURO the latter part of November, when Medals and Certificates of Merit will be awarded to successful Exhibitors.

For further particulars, apply to the Secretary,—

THOMAS B. PROVIS, Assoc. Mem. Inst. C.E.

2, Chapel-street, Camborne.

## INDIAN PHENIX GOLD MINING COMPANY (LIMITED).

Notice is hereby given, that NO APPLICATIONS FOR SHARES in this company will be RECEIVED after MONDAY, the 25th instant. H. T. MCNEALE, Secretary (pro tem.).

62, Austinfriars, London, E.C.

## THE LAST CHANCE SILVER MINING COMPANY OF UTAH (LIMITED).

44, King William-street, London, E.C., 18th October, 1880. AN EXTRAORDINARY GENERAL MEETING of the shareholders of this company, HELD at the offices of the company as above, on the 12th instant, the resolutions passed at the meeting held on the 27th ultimo were confirmed unanimously.

To ensure allotment to members of the above company applications for shares in the Last Chance Consolidated Silver Mining Company (Limited) must be made on or before the 1st day of November, 1880, after which date all members who have not then applied will be considered to waive their right to an allotment.

Foms of application can be obtained from the undersigned, and on application at the offices of the Last Chance Consolidated Silver Mining Company (Limited), Moorgate-street Chambers, London, E.C.

JOHN PORTER.

## THE SCOTTISH AUSTRALIAN MINING COMPANY (LIMITED).

Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders of the Scottish Australian Mining Company (Limited) will be HELD at the City Terminus Hotel, Cannon-street, London, on FRIDAY, the 25th October instant, at Twelve o'clock at noon precisely, to receive the directors' report and accounts, declare a dividend, and transact the other usual business.

The Share Transfer-Books will be closed from Thursday, the 21st instant, until Friday, the 29th instant, both days inclusive.

By Order of Directors, C. GRAINGER, Secretary.

55, Old Broad-street, London, 19th October, 1880.

## LA PLATA MINING AND SMELTING COMPANY OF LEADVILLE, COLORADO.

FOURTEENTH CONSECUTIVE MONTHLY DIVIDEND. The Board of Directors have DECLARED a DIVIDEND of \$15,000 out of the net profits for the month of September of \$15,926 40 c., being SEVEN AND A-HALF CENTS PER SHARE (par value \$10) on the capital PAYABLE on MONDAY, 1st November, leaving at credit of reserve fund \$50,905 90 c.

THEODORE BERDELL, Vice-President.

2, Great Winchester-street, E.C., 22nd October, 1880.

## THE COLAR GOLD MINING COMPANY (LIMITED).

The Mining Journal says: "The professional evidence of the value of the Colar Company's property is of a peculiarly impartial character, being no less than the incidental reference in the report upon some adjoining land. Reporting for Messrs. Arlithnot and Co., of Madras, and another company on land immediately to the south of that of the Colar Company, Mr. John Harris states that the number of quartz reefs that have heavy outcrops showing up, and that may also be traced by extensive surface workings, is six; they can be traced down from the Oregon Mine on the north end of the field right through the Colar Company's land. Equally satisfactory evidence is given by the engineer of the Mysore Gold Mining Company, whose southern boundary is the Colar Company's northern boundary."

The EXCLUSIVE RIGHT OF MINING in the DISTRICT was GRANTED by the GOVERNMENT of MYSORE, and, after a prolonged and careful survey the concessionaries acquired the rights over special blocks of land, INCLUDING ONLY LAND IN WHICH AURIFEROUS REEFS ARE.

Full prospectuses and forms of application can be had at the office of the company, 5, East India-avenue, Leadenhall-street, E.C., where applications for shares may be forwarded.

MINE "EL CALA," GUAYANA, VENEZUELA.

COUPONS OF SHARES ..... 322  
Gold in bars produced in the month of August, 1880, and remitted to Messrs. Baring Brothers and Co., London, 527 1/2 ozs.

DIVIDEND distributed for each coupon, \$100.  
(Signed) A. LICCIONI, President.  
(Signed) VICTOR J. GRILLET, Treasurer.

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W. TREGAY, Mining Engineer, REDRUTH, Having had many years' practical experience in Metallic Mines, is engaged to INSPECT, REPORT, and ADVISE on every description of MINERAL PROPERTY.

THE SHEFFIELD NICKEL AND SILVER PLATING COMPANY (Limited).—In the Chancery Division on Wednesday, Mr. Justice Field heard a petition for a stay of proceedings in the winding-up, all the debts having been paid and the company proposing to start afresh. Mr. Justice Field, in making his order, expressed his hope that the company would now do well.

REDRUTH MINING EXCHANGE.—The business in the Redruth Mining Exchange still absorbs a good deal of the attention of mine shareholders resident in West Cornwall and elsewhere. This exchange now numbers 180 members—members paying a subscription of 15s. per annum, and others 30s. per annum. The original subscribers contributed 500*s*. in 100 shares of 5*s*. each. Members are freely admitted, this rule—an unwritten one—being one of inclusion, and not of exclusion.—*West Briton*.

FOGS AND FROSTS.—Dr. Locock's Pulmonic Wafers relieve the most violent cough, and protect weak lungs from all the irritation of fogs and frosts asthma, consumption, bronchitis, colds, phlegm, pains in the chest, and rheumatism, are instantly removed and rapidly cured by Dr. Locock's Wafers, which taste pleasantly. Sold at 1*s*. 1*d*. per box.

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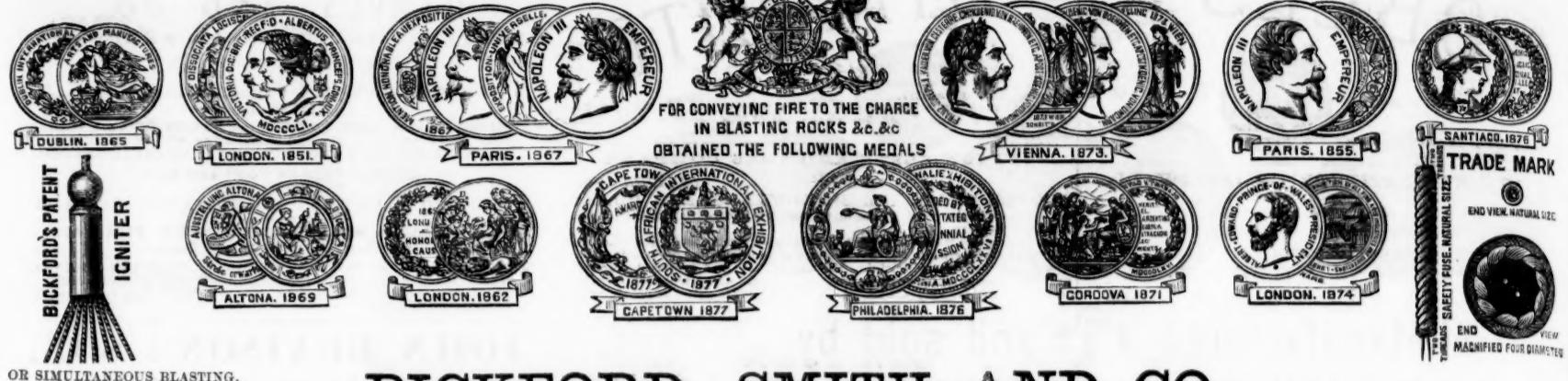
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## BICKFORD'S PATENT FUSES



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FOR USE IN ALL BLASTING OPERATIONS AND SPECIALLY PREPARED FOR ANY CLIMATE

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"The book cannot fail to be well received by all connected with collieries."—*Mining Journal*.

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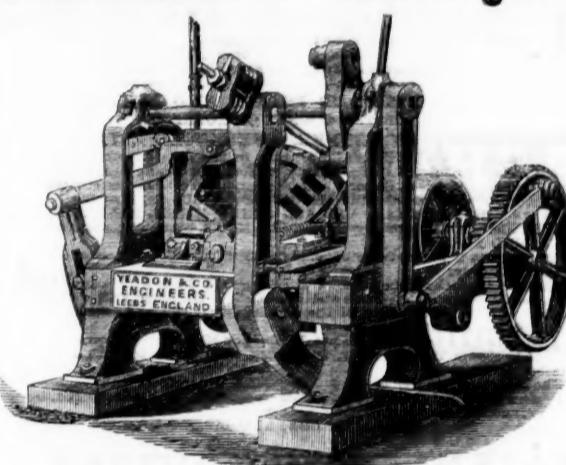
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These Machines utilise smudge or small coal by making it into Briquettes or blocks of compressed fuel at the rate of 36,000 per day. The cost of preparing, mixing, and making is under One Shilling per ton. The Briquettes sell readily for Locomotives, Household, or other purposes. Full particulars on application to

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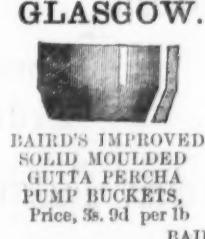
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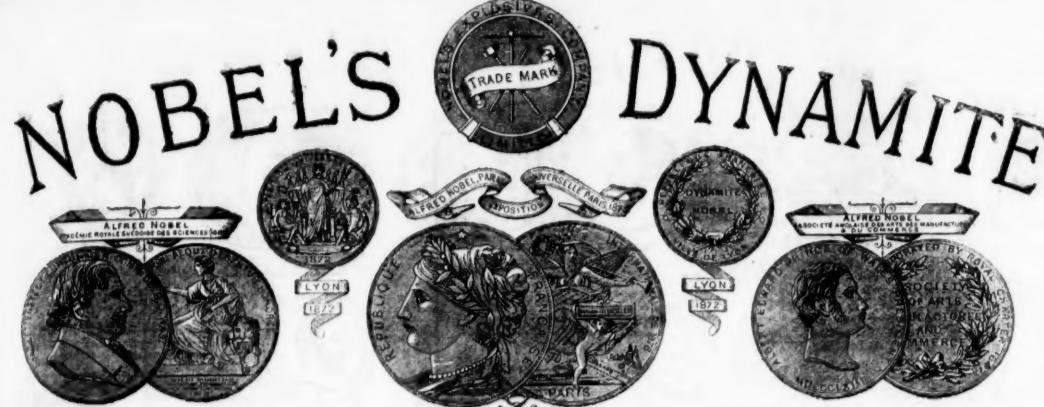
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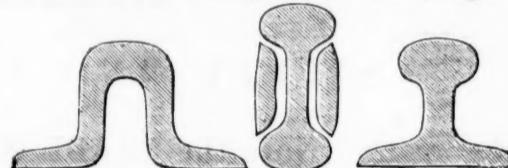
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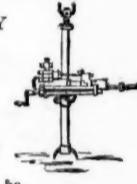
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## BRITISH DIVIDEND MINES.

Shares.	Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
3935 Blue Hills, t, c, St. Agnes	4	6	4½	3½ 4	0 2 0	0 2 0 Sept. 1880
10000 Caron, t, Cardigan*	2	0	0	2	1½ 2	0 0 0 Oct. 1878
1000 Carn Brea, c, t, Illogan†	58	7	6	84	82½ 85	308 0 0 1 0 0 Feb. 1874
1040 Devon Gt. Consols, c, a, Tavistock†	1	0	0	12½	11½ 12½	118 1 0 0 0 0 Sept. 1880
4296 Dolcoath, c, t, Camborne	10	14	10	56½	56 58	118 11 3 1 0 0 Sept. 1880
30000 East Craven Moor, * t, Pateley Bdg.	1	0	0	3½	3½ 1	0 0 0 0 0 0 Aug. 1880
6400 East Pool, t, c, Illogan	0	9	8	38½	37 38	29 17 9 1 2 6 Sept. 1880
12500 Frongoch, * t, Cardigan (11000 sh. iss.)	2	0	0	4	4½ 4½	0 2 0 0 0 0 Oct. 1878
40000 Glasg. Car., * t, [30000 sh. 41 pd. 10000 15s. pd.]	1	0	0	1½	1 1½	0 13 10 0 0 0 Aug. 1878
7500 Gorsedd and Merlin Con., t, Flint	2	10	0	3	2½ 3	0 5 0 0 0 0 Aug. 1877
15000 Great Laxey, t, Isle of Man†	4	0	0	19½	17 18 x.d.	26 8 0 0 6 0 Oct. 1880
6400 Green Hurlt., t, Durham*	0	6	5	8½	8½ 8½	2 14 0 0 4 0 Oct. 1880
20000 Grogwinion, t, Cardigan*	2	0	0	3½	3 3½	0 16 4 0 1 6 July 1880
2800 Isle of Man, t, Isle of Man†	25	0	0	—	83 5 0	1 0 0 0 0 0 Sept. 1880
20000 Leadhills*, t, Lanarkshire	6	0	0	3	2½ 3	0 15 0 0 0 0 Mar. 1878
4000 Lisburne, t, Cardiganshire	18	15	0	—	604 10	0 0 2 0 0 0 Oct. 1880
10000 Mellanear, t, Hayle*	2	0	0	5	4½ 5½	1 0 0 0 2 6 Nov. 1880
9000 Minera Mining Co., t, Wrexham*	5	0	0	11½	10½ 11½	68 17 2 0 4 0 Aug. 1880
20000 Mining Co. of Ireland, c, t, C.	7	0	0	3½	3 3½	24 0 0 2 6 Jan. 1880
8000 Mous, t, Anglesea	5	0	0	16	15 16	0 10 0 0 10 0 July 1880
5328 North Bosy, t, c, Blackwater	0	5	8	3½	3 3½	0 3 4 0 0 0 Oct. 1878
11829 North Hendre, t, Wales	2	10	0	5½	5 5½	3 10 0 0 7 8 Mar. 1880
8063 Ditto	1	0	0	—	0 0 0 0 0 0 Mar. 1880	
5000 Penhalls, t, St. Agnes†	3	17	6	2½	2 2½	3 15 6 0 2 0 Sept. 1880
6000 Pennant, t, bar, North Wales*	5	0	0	4	3 3½	0 10 0 0 5 0 Mar. 1878
12000 Phoenix United, t, c, Link*	5	10	2	3½	3½ 3½	0 2 0 0 6 0 Mar. 1880
18000 Pr. Patrick, * t, [als. 12000 sh. 10 p.c.]	1	0	0	—	0 0 0 0 0 0 July 1880	
10000 Red Rock, * t, Cardigan	2	0	0	2	1½ 2	0 4 0 0 2 0 Jan. 1878
12000 Roman Gravels, t, Salop*	7	10	0	9½	9½ 9½	8 1 0 0 5 0 Apr. 1880
4000 Rhialun, * t, Wales	10	0	0	—	0 5 0 0 5 0 Feb. 1880	
512 South Cardon, c, St. Cleer†	1	5	0	57½	55 60	749 0 0 1 0 0 July 1880
6123 South Condurrow, t, c, Camborne†	6	5	6	11½	11 11½	7 12 0 0 10 0 Aug. 1880
9000 South Darren, t, Cardigan*	1	16	0	4	2½ 2½	0 4 0 0 2 0 Apr. 1880
4500 South Wheat Frances, t, Illogan†	7	12	4	12½	13½ 14½	40 15 6 0 10 0 July 1880
12000 Tankerville, t, Salt*	0	0	0	—	0 24 2½ 2½	4 17 6 0 5 0 Jan. 1877
6000 Tinctor, c, t, Pool, Illogan†	11	10	0	16½	16 17	50 8 6 0 5 0 May 1877
15000 Van, t, Llanidloes*	0	0	0	19½	18 19	24 13 0 0 7 6 July 1880
3000 West Chiverton, t, Perranzabuloe†	20	5	0	3½	2½ 3	55 10 0 0 10 0 Feb. 1878
512 West Tolgus, t, Redruth	85	10	0	52	50 55	33 0 0 1 0 0 Jan. 1879
1200 West Wheat Seton, c, Camborne†	25	10	0	19	17 19	223 0 0 7 6 Apr. 1878
6000 West Bassett, c, Illogan	7	0	0	46	15½ 17½	26 17 0 0 5 0 Oct. 1880
12000 Wheat Crebor, t, Tavistock	2	4	0	4½	4 4½	0 6 3 0 2 6 July 1880
1024 Wheat Elitta, t, St. Austell	18	0	0	—	42 10 0 0 8 0 Aug. 1880	
4295 Wheat Fonda, t, St. Agnes	5	4	6	5	4½ 4½	12 17 0 0 2 6 Sept. 1880
3000 Wheat Fevor, t, Redruth	7	11	0	29	28 29	6 8 6 1 2 6 Sept. 1880

## FOREIGN DIVIDEND MINES.

Shares.	Paid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
35500 Alamillo, t, Spain†	2	0	0	1½	1 1½	2 2 0 0 0 1 3 Sept. 1880
13000 Almada and Trito Cons., * t, *†	1	0	0	—	1½ 1½	0 8 3 0 1 0 May 1876
20000 Australian, c, South Australia*	7	7	6	1½ 1½	1 5 6	0 2 0 0 2 0 Aug. 1880
20000 Cape Copper Mining, * t, South Africa*	7	0	0	42	41 42	39 7 6 1 0 0 Sept. 1880
35000 Cesena Sulph. Co., Romagna, Italy*	10	0	0	—	1 0 0 0 1 0 Aug. 1879	
10000 Copiago, c, Chile* (20 shares)	17	0	0	9	8½ 9½	0 1 0 0 5 0 Apr. 1879
23500 Eberhardt and Aurora, s, Nevada†	10	0	0	24½	24 2½	18 5 0 0 5 0 July 1880
7000 English Australian, * t, S. Aust.*	2	10	0	1½	1½ 1½	2 18 9 0 1 0 Mar. 1880
25000 Fortuna, t, Spain Gran†	2	0	0	4	3½ 4	0 6 0 0 1 0 Sept. 1880
15000 Linares, t, Spain*	3	0	0	8½	8½ 8½	18 10 10 0 8 0 Sept. 1880
66000 New Querada, c, Venezuela	5	0	0	4½	4½ 4½	0 2 0 0 2 0 July 1880
25000 Pitangui, g, Brazil (in 6000 £1 pd.)	0	10	0	3½	3 3½	0 1 0 0 1 0 Sept. 1880
10000 Pontebande, * t, France*	20	0	0	20	18 20	27 17 6 0 10 0 Dec. 1879
10000 Post Phillip, * t, Clunes† (2 shares)	1	0	0	—	3½ 3½	1 13 4 0 1 4 Mar. 1880
54000 Richmond Consol., c, Nevada†*	5	0	0	15	15½ 15½	9 11 6 0 10 0 Aug. 1880
1355830 Rio Tinto, * t, Sp. Coup. Bds., Huelva 100	0	0	0	95½	95 95	5 per cent. July 1880
Do. Mort. Buds. English 5 p.c. Script	0	0	0	—	91½ 92	5 per cent. July 1880
22500 Ditto, shares	10	0	0	17	16½ 17	0 18 0 0 8 0 Nov. 1880
40000 Santa Barbara, * t, Brazil	0	10	0	2½	2½ 2½	0 10 9 0 2 0 Apr. 1880
12000 Scottish-Australian Mining Co., * t, New	1	0	0	1½	1½ 1½	0 2 0 0 2 0 May 1880
80000 Sentine, * t, Arles, France	0	10	0	1½	1½ 1½	0 2 0 0 2 0 May 1880
22500 Sierra Buttes, g, California†	2	0	0	1½	1½ 1½	2 1 6 0 1 0 Oct. 1880
40625 Ditto, Plumas, Eureka	2	0	0	2½	2½ 2½	21 10 0 0 3 0 Oct. 1880
253000 St. John del Rey† (£5 Stock and multiples dealt in).	190	200	0	12½	12½ 12½	p.c. for half-year, June 1880
20000 Tolima, g, s, Colombia	5	0	0	—	1 7 3	0 0 3 Aug. 1880
25000 Victoria* (London), g, Australia	1	0	0	—	0 13 1½ 0 0 7½	June 1879
15000 Western Andes, t, Colombia	5	0	0	—	2 18 0 0 2 6 Aug. 1880	
2100 W. Prussian sh. (5500 sh. £10 pd.)	10	0	0	10½	10 10½	3 6 0 0 8 0 Oct. 1880

\* Have made calls since last dividend was paid.

## NON-DIVIDEND BRITISH MINES.

Shares.	Paid.	Last wk.	Clos. pr.	Paid.	Last wk.	Clos. pr.
25600 Aberllyn, * t, bl, Carmarvon	1	0	0	1	1	7½ 1
12000 Ashton, t, Carmarvonshire*	5	0	0	¾	¾ ¾	1½ ¾
11583 Bedford Unit, * t, Taxis (£1 hab.)	0	8	0	—	1½ 1	2½ 1½
25000 Belwoda*, t, Roche	1	0	0	—	1½ 1	1½ 1½
600 Bendigaid, * t, Wales	10	0	0	—	1½ 1	1½ 1½
30000 Bettws-y-Coed*, t, (20000 sh. issued)	1	0	0	—	1½ 1	1½ 1½
8000 Blaen Caethan, t, Cardigan	3	0	0	—	1½ 1	1½ 1½
30000 Bodfari, * t, bl, Denbighshire	1	0	0	—	1½ 1	1½ 1½